

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF RHODE ISLAND

Conservation Law Foundation, Inc.,

Plaintiff,

V.

Shell Oil Products US,
Shell Oil Company,
Shell Petroleum, Inc.,
Shell Trading (US) Company,
Motiva Enterprises LLC,
Triton Terminating LLC, and
Equilon Enterprises LLC,

Defendants.

C.A. No. 1:17-cv-00396-WES-LDA

THIRD AMENDED COMPLAINT

and

JURY DEMAND

**CONSERVATION LAW FOUNDATION'S THIRD AMENDED COMPLAINT FOR
DECLARATORY AND INJUNCTIVE RELIEF AND CIVIL PENALTIES**

Plaintiff Conservation Law Foundation, Inc. (“CLF”), by and through its counsel, hereby alleges:

INTRODUCTION

1. This is a civil suit brought under the citizen suit enforcement provisions of the Federal Water Pollution Control Act, 33 U.S.C. §§ 1251, *et seq.* (“Clean Water Act” or “CWA”), and the Solid Waste Disposal Act, 42 U.S.C. §§ 6901, *et seq.* (“Resource Conservation and Recovery Act” or “RCRA”). Plaintiff CLF seeks declaratory and injunctive relief, civil penalties, and other relief the Court deems proper to remedy Defendants’ Shell Oil Products US, Shell Oil Company, Shell Petroleum, Inc., Shell Trading (US) Company, Motiva Enterprises LLC, Triton Terminating LLC, and Equilon Enterprises LLC (hereinafter, collectively, “Defendants” or “Shell”) violations of federal law, which include: (1) Shell’s past and ongoing failures to comply with Rhode Island Pollutant Discharge Elimination System (“RIPDES”) Permit No. RI0001481

(the “Permit”),¹ and the Clean Water Act; and (2) that Shell has contributed and is contributing to past and present handling, storage, treatment, transportation, or disposal of solid and hazardous wastes which may present an imminent and substantial endangerment to health or the environment in violation of RCRA.

2. These violations of federal law have occurred and are occurring at Shell’s Providence Terminal, formerly the Motiva Enterprises LLC Providence Terminal, a bulk storage and fuel terminal located at 520 Allens Avenue in Providence, Rhode Island (hereinafter “Providence Terminal”).

JURISDICTION AND VENUE

3. CLF brings this civil suit under the citizen suit enforcement provisions of Section 505 of the Clean Water Act, 33 U.S.C. § 1365, and Section 7002 of the Resource Conservation and Recovery Act, 42 U.S.C. § 6972. This Court has subject matter jurisdiction over the parties and this action pursuant to those statutes and 28 U.S.C. § 1331 (providing district courts with original jurisdiction over an action arising under the Constitution and laws of the United States).

4. Venue is proper in the U.S. District Court for the District of Rhode Island pursuant to Section 505(c)(1) of the CWA, 33 U.S.C. § 1365(c)(1), and Section 7002(a) of RCRA, 42 U.S.C. § 6972(a), because the source of the violations is located within this judicial district.

5. On June 28, 2017, CLF notified Shell of its intention to file suit for violations of the Clean Water Act, in compliance with the statutory notice requirements set forth in 33 U.S.C. § 1365(a)(1), and the corresponding regulations at 40 C.F.R. § 135.2. Letter to Shell, from A.

¹ The first version of the Permit as relevant to this lawsuit was issued on February 14, 2011 and became effective April 1, 2011 (“2011 Permit,” attached hereto as Exhibit A). Although it expired April 1, 2016, it was administratively continued until a new permit was issued on January 30, 2019 and became effective March 1, 2019 (“2019 Permit,” attached hereto as Exhibit L). The terms of both permits are virtually identical as it relates to this case.

Moses, Vice President and Director, CLF Rhode Island (June 28, 2017) (hereinafter, “CLF’s Notice Letter”). In that June 28, 2017 letter, CLF also notified Shell of its intention to file suit for violations of RCRA, in compliance with the statutory notice requirements set forth in 42 U.S.C. § 6972(b)(2)(A), and the corresponding regulations at 40 C.F.R. Part 254. *Id.* A true and accurate copy of CLF’s Notice Letter (without attachments) is appended hereto as Exhibit B.

6. Thereafter, on February 12, 2018, CLF issued a supplemental notice letter. In addition to the violations alleged in the June 28, 2017 Letter, CLF identified two additional parties as defendants: Triton Terminaling LLC and Equilon Enterprises LLC. CLF also identified additional regulations under RCRA and associated Hazardous Waste Regulations of Rhode Island governing the management of hazardous wastes at Shell’s Providence Terminal. Letter to Shell, from H. Murray, Staff Attorney, CLF (February 12, 2018) (hereinafter “CLF’s Supplemental Notice Letter”). A true and accurate copy of CLF’s Supplemental Notice Letter is appended hereto as Exhibit C.

7. At the time CLF filed the Amended Complaint in this action, more than ninety days had elapsed since CLF’s Notice Letter was served on Shell, during which time neither the Environmental Protection Agency (“EPA”) nor the Rhode Island Department of Environmental Management (“DEM”) commenced and diligently prosecuted a court action to redress the CWA or RCRA violations alleged in this complaint. *See* 33 U.S.C. § 1365(b)(1)(B); 42 U.S.C. § 6972(b).

8. More than ninety days have elapsed since CLF’s Supplemental Notice Letter was served on Shell, during which time neither the EPA nor DEM has commenced and diligently prosecuted a court action to redress the CWA and RCRA violations alleged in this complaint. *See* 33 U.S.C. § 1365(b)(1)(B); 42 U.S.C. § 6972(b).

9. Further, neither EPA nor DEM has taken administrative action to redress the Clean Water Act or RCRA violations alleged in this complaint.

PARTIES

Plaintiff

10. Plaintiff CLF is a 501(c)(3) nonprofit, member-supported organization dedicated to the conservation and protection of New England's public health, environment, and natural resources. It is incorporated under the laws of Massachusetts with its principal place of business at 62 Summer Street, Boston, MA 02110. CLF operates in Rhode Island at 235 Promenade Street, Suite 560, Providence, RI 02908. CLF has over 5,000 members, including over 300 members in Rhode Island. CLF has long worked to protect the health of New England's waterways, including addressing the significant water quality impacts of industrial and stormwater pollution.

11. CLF members live near, recreate on, and regularly visit the roads and waters near Shell's Providence Terminal, including, but not limited to, the Providence River, the Providence Harbor, and Narragansett Bay. CLF members use and enjoy these waters for recreational and aesthetic purposes, including, but not limited to, boating, swimming, fishing, observing wildlife, and sightseeing, and intend to continue to engage in these activities in the future. CLF members use the roads near Shell's Providence Terminal for travel, including driving and biking.

12. CLF and its members are harmed and threatened by Shell's acts and omissions at the Providence Terminal and its violations of environmental laws and regulations.

13. CLF and its members are directly and indirectly exposed to or otherwise harmed by, and have an interest in preventing, Shell's pollutant discharges and/or releases from the Providence Terminal. Among other pollutants, these discharges and/or releases contain toxic pollutants known to be harmful to humans and aquatic life, to persist in the environment, to bioaccumulate

in fish and shellfish, and to cause harm to water quality and living marine resources. These discharges and/or releases of pollutants, including toxic pollutants, result from Shell's on-going activities at the Providence Terminal and its failure to comply with the Permit.

14. Further, CLF and its members are injured by Shell's failure to comply with the monitoring and reporting requirements in its Permit. By failing to take samples at the required times, failing to take samples at all, and failing to report the contents of its discharge fully and accurately, Shell is preventing government regulators, the public, and CLF and its members from knowing what pollutants, and in what quantities, the Providence Terminal is discharging to the Providence River. This impairs CLF and its members' ability to make fully informed decisions about their use of the River that take into account the presence of harmful pollutants.

15. Furthermore, the monitoring and reporting requirements in the Permit are critical to assure necessary revisions and modifications of pollutant control requirements. By failing to monitor and report in a manner consistent with the Permit, Shell has avoided regulatory obligations triggered by monitoring results.

16. CLF and its members are concerned that Shell's pollutant discharges and/or releases, including toxic pollutant discharges and/or releases, harm the ecosystem and human use and enjoyment of the Providence River, the Providence Harbor, and Narragansett Bay. CLF and its members are also deeply concerned about health impacts resulting from exposure to pollutants from the Providence Terminal when they are present in the surrounding environment. For these reasons, Shell's violations have diminished and continue to diminish CLF's members' use and enjoyment of the environment surrounding the Providence Terminal. CLF seeks, on behalf of its members, to prevent and remedy these ongoing injuries, compel compliance with the Permit, and seek restoration of affected marine resources with this action.

17. CLF and its members are also concerned about, and have an interest in eliminating the risk from, the discharge and/or release of pollutants from the Providence Terminal into the Providence River, the Providence Harbor, and Narragansett Bay, as well as into nearby communities and ecosystems.

18. CLF and its members are affected by, and concerned with, pollutant discharges and/or releases resulting from Shell's failure to utilize good engineering practices in the design and operation of the Providence Terminal and its wastewater treatment system. Shell's wastewater treatment system is designed, engineered, and operated such that precipitation has caused and will cause untreated and undertreated pollutant discharges and/or releases due to undersized pipes and inadequate storage and treatment infrastructure.

19. Further, in addition to discharges and/or releases due to precipitation, the Providence Terminal has not been designed or modified to address pollutant discharges and/or releases due to flooding; specifically, the Providence Terminal is likely to discharge and/or release pollutants into surrounding waters, groundwater, the community, and the air because it has not been designed to withstand flooding associated with storm events and storm surge, tides, sea level rise, and increasing sea surface temperatures.

20. The substantial risk of pollutant discharges and/or releases is due to, including, but not limited to, inadequate infrastructure design and infrastructure failure at the Providence Terminal to sufficiently prepare for precipitation and/or flooding that is exacerbated by storms and storm surge, sea level rise, and increasing sea surface temperatures, as discussed in Section IV.A, *infra*.

21. CLF and its members are placed directly in harm's way by Shell's pollutant discharges, releases, and/or risk of releases and have no assurance that they will be protected from pollutants released and/or discharged from the Providence Terminal. Shell is not in compliance with the

Permit for, at a minimum, the reasons set forth herein, including, but not limited to, failing to comply with the Permit's monitoring and reporting requirements; failing to develop and implement an adequate stormwater pollution prevention plan ("SWPPP"), spill prevention, control and countermeasures plan ("SPCC"), and facility response plan ("FRP"); and failing to utilize good engineering practices in the design and operation of the Providence Terminal, including, but not limited to, its wastewater treatment system.

Defendants

22. Defendant Shell Oil Products US was founded in 1995 and is headquartered in Houston, Texas. Shell Oil Products US is a wholly-owned subsidiary of Royal Dutch Shell plc that markets and distributes crude oil and petroleum products.

23. Defendant Shell Oil Company, founded in 1912 when the Royal Dutch/Shell Group founded the American Gasoline Company, is headquartered in Houston, Texas. Shell Oil Company is a wholly-owned subsidiary of Royal Dutch Shell plc that produces oil and gas in deepwater in the Gulf of Mexico, heavy oil in California, and oil and gas from shale in Pennsylvania.

24. Defendant Shell Petroleum, Inc. was founded in 1984 and is headquartered in Houston, Texas. Shell Petroleum, Inc. is a wholly-owned subsidiary of Royal Dutch Shell plc that produces, refines, and markets petroleum products and chemicals.

25. Defendant Shell Trading (US) Company became operational in 1998 and is headquartered in Houston, Texas. Shell Trading (US) Company is a wholly-owned subsidiary of Royal Dutch Shell plc and is one of the world's largest energy trading companies, operating as the market interface of Royal Dutch Shell's US companies and affiliates.

26. Defendant Motiva Enterprises LLC, a wholly-owned affiliate of Saudi Aramco, is a fuel refining, distribution, production, and marketing company headquartered in Houston, Texas. Motiva Enterprises LLC formerly operated the Providence Terminal. Motiva Enterprises LLC was a joint venture between Royal Dutch Shell plc and Saudi Aramco (through its subsidiary Saudi Refining, Inc.). Shell formally announced the completion of the dissolution of Motiva Enterprises LLC on May 1, 2017. *See* Shell Global, *Shell Announces the Completion of Transaction to Separate Motiva Assets* (May 1, 2017), <http://www.shell.com/media/news-and-media-releases/2017/completion-transaction-to-separate-motiva-assets.html>. Per the dissolution agreement, Shell maintained control over the Northeastern region of the U.S., including ownership of the Providence Terminal. *Id.* References to Shell herein include any predecessors, successors, parents, subsidiaries, affiliates, and divisions of Shell, including Motiva Enterprises LLC.

27. Defendant Equilon Enterprises LLC was initially joined with Texaco as a joint venture by Shell Oil Company in 1998. On February 8, 2002 Texaco divested all interests in Equilon Enterprises LLC and Motiva Enterprises LLC to Shell. Equilon Enterprises LLC is currently doing business as Shell Oil Products US.

28. Defendant Triton Terminaling LLC is a subsidiary of Shell Oil Company and on May 15, 2017, assumed RIPDES Permit No. RI0001481 for the Shell Providence Terminal.

29. Royal Dutch Shell plc is the parent company of the Royal Dutch Shell Group, a multinational oil and gas corporation incorporated in England and Wales and headquartered in The Hague, The Netherlands. The Royal Dutch Shell Group formed in 1907 upon the merger of the Royal Dutch Petroleum Company and the Shell Transport and Trading Company.

30. Upon information and belief, Shell is the world's seventh largest company by 2016 revenues and the second largest oil and gas company. Shell Oil Company, Royal Dutch Shell plc's largest business, held the highest 2016 market value on the London Stock Exchange, with a market cap of 193 billion pounds (£).

31. Shell is a large producer, refiner, distributor, and marketer of petrochemicals. Upon information and belief, Shell produces approximately 3.7 million barrels of oil equivalent ("BOE") every day.

32. Upon information and belief, Shell's "proved reserves" (the amount of oil and gas that Shell could presently extract based on current technology and capabilities) as of December 31, 2016, are approximately 13.248 billion BOE, a 2.887 billion BOE increase (before production) from the year before. With interests in 22 oil refineries and operations in over 70 countries, Shell has a combined daily refining capacity of 2.9 million barrels.

33. Upon information and belief, Shell Oil Products US operates the Providence Terminal and Triton Terminaling LLC holds the Permit for the Providence Terminal.

STATUTORY AND REGULATORY BACKGROUND

Clean Water Act

34. Congress enacted the Clean Water Act to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). To accomplish that objective, Congress set as a "national goal that the discharge of pollutants into the navigable waters be eliminated" *Id.*

35. Accordingly, Section 301(a) of the Clean Water Act, 33 U.S.C. § 1311(a), prohibits the discharge of any pollutant into waters of the United States from a point source, unless the discharge complies with various enumerated sections of the Act.

36. Among other things, Section 301(a) prohibits discharges not authorized by, or in violation of, the terms of a valid National Pollutant Discharge Elimination System (“NPDES”) permit issued pursuant to Section 402(p) of the CWA, 33 U.S.C. § 1342(p).

37. Section 502(14) of the Clean Water Act defines “point source” to include “any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.” 33 U.S.C. § 1362(14).

38. Under the regulations implementing the Clean Water Act, the definition of “discharge of a pollutant” includes “additions of pollutants into waters of the United States from: surface runoff which is collected or channelled by man.” 40 C.F.R. § 122.2.

39. Dischargers of pollutants, including industrial wastewater, process wastewater, and stormwater associated with industrial activity, must obtain and comply with the requirements of NPDES permits issued under Section 402 of the Clean Water Act, 33 U.S.C. § 1342.

40. NPDES permits contain pollutant sampling and monitoring requirements and limits on the amount or concentration of allowable pollutants, in addition to requirements regarding control measures, best management practices, and recordkeeping and reporting.

41. The discharge of any pollutant in violation of a NPDES permit, the failure to conduct required monitoring for pollutant discharges, and the failure to comply with other requirements of a NPDES permit are all violations of the Clean Water Act, 33 U.S.C. §§ 1311(a), 1342.

42. In Rhode Island, the Director of DEM has been delegated authority to implement the NPDES permit program, R.I. Gen. Laws § 46-12-3, which in Rhode Island is called the Rhode Island Pollutant Discharge Elimination System, or “RIPDES.”

43. Section 505(a)(1) of the Clean Water Act, 33 U.S.C. § 1365(a)(1), provides for citizen enforcement actions against “any person . . . who is alleged to be in violation of [] an effluent standard or limitation . . . or [] an order issued by the [EPA] Administrator or a State with respect to such a standard or limitation.”

44. Such enforcement action under Section 505(a) of the Clean Water Act includes an action seeking remedies for unauthorized discharges in violation of Section 301 of the Clean Water Act, 33 U.S.C § 1311, as well as for failing to comply with one or more permit conditions in violation of Sections 402 and 505(f) of the Act, 33 U.S.C. §§ 1342, 1365(f). Each separate violation of the Clean Water Act subjects the violator to a penalty of up to \$37,500 per day per violation for all violations occurring between January 12, 2009 and November 2, 2015; up to \$51,570 per day per violation for all violations occurring after November 2, 2015 and assessed on or after August 1, 2016 but before January 15, 2017; up to \$52,414 per day per violation for all violations occurring after November 2, 2015 and assessed on or after January 15, 2017; and up to \$53,484 per day per violation for all violations occurring after November 2, 2015 and assessed on or after January 15, 2018. *See* 33 U.S.C. §§ 1319(d), 1365(a); 40 C.F.R. §§ 19.1–19.4.

Resource Conservation and Recovery Act

45. RCRA’s citizen suit provision, 42 U.S.C. § 6972, provides in relevant part:

[A]ny person may commence a civil action on his own behalf-
 (1)(A) against any person . . . who is alleged to be in violation of any permit, standard, regulation, condition, requirement, prohibition, or order which has become effective pursuant to this chapter; or (B) against any person . . . including any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility, who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste which may present an imminent and substantial endangerment to health or the environment[.]

42 U.S.C. § 6972(a)(1).

46. “RCRA’s primary purpose . . . is to reduce the generation of hazardous waste and to ensure the proper treatment, storage, and disposal of that waste which is nonetheless generated, ‘so as to minimize the present and future threat to human health and the environment.’” *Meghrig v. KFC W., Inc.*, 516 U.S. 479, 483 (1996) (quoting 42 U.S.C. § 6902(b)).

47. RCRA’s citizen suit provision “allows citizen suits when there is a reasonable prospect that a serious, near-term threat to human health or the environment exists.” *Me. People’s All. & Nat. Res. Def. Council v. Mallinckrodt, Inc.*, 471 F.3d 277, 279 (1st Cir. 2006).

FACTUAL BACKGROUND

I. Shell’s Providence Terminal

48. Defendants, acting through officers, managers, subsidiary companies, and instrumentalities, own or have owned and/or operate or have operated the Providence Terminal.

49. The Providence Terminal is a bulk storage and fuel terminal that has operated since 1907. It previously operated as a lubrication oil blending facility, an asphalt production facility, and a petroleum distribution facility.

50. Upon information and belief, the Providence Terminal is comprised of approximately 75 acres of land.

51. The Providence Terminal consists of “tank farms” (the West Side Tank Farm and East Side Tank Farm), an ethanol railcar terminal, a marine terminal, buildings, and infrastructure. The West and East Side Tank Farms refer to the tanks located on the west and east sides of Allens Avenue, respectively.

52. The Providence Terminal is engaged in the receipt, storage, and distribution of petroleum products. The spectrum of fuels handled by the Providence Terminal consists of motor gasoline,

fuel grade ethanol, fuel oil, jet fuel, fuel additives, and diesel. The Providence Terminal contains twenty-five refined petroleum product storage tanks, six of which are utilized for ethanol storage.

53. The Providence Terminal processes both neat ethanol and fuel ethanol, and receives and processes off-spec gasoline, gasoline blending stock, and dimate (hexane) to produce saleable gasoline. Fuel products are received at the marine transfer area of the Providence Terminal via ships and barges and shipped from the Providence Terminal via trucks or barges. The ethanol is transferred into ethanol railcars and transported off the site.

54. The Providence Terminal generates, stores, handles, discharges, and disposes of (and has throughout the term of Motiva's and Shell's ownership and control) refined petroleum products containing and/or comprised of hazardous waste constituents, toxic and hazardous chemicals, metals, and compounds, including, but not limited to: Ignitable Waste, Lead, Benzene, Ethanol, Ethylbenzene, Iron, Methyl Tertiary Butyl Ether (MTBE), Non-aqueous phase liquid (NAPL), SGT-HEM (Oil and Grease), Petroleum Hydrocarbons, Pyrene, Total Suspended Solids, Xylenes (m,p,o), and the following Polycyclic Aromatic Hydrocarbons (PAHs):² Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(ghi)perylene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, and Pyrene.

55. Petroleum products handled and stored at the Providence Terminal are comprised of hundreds of petroleum hydrocarbons and other constituents including but not limited to hazardous waste constituents, such as Benzene, Toluene, Naphthalene, Fluoranthene,

² Referred to as "Polynuclear" Aromatic Hydrocarbons (PAHs) in the Permit. 2011 Permit Part I.A.1, Ex. A at 8-9; 2019 Permit Part I.A.1, Ex. L at 9-10. Polynuclear is synonymous with Polycyclic.

Benzo(k)fluoranthene, Benzo(b)fluoranthene, Indeno(1,2,3-cd)pyrene, Benzo(a)pyrene, Benzo(a)anthracene, Dibenzo(a,h)anthracene, Chrysene, and 3-Methyl-cholanthrene.

56. At the Providence Terminal, Shell is regulated under RCRA as a generator of hazardous waste, Handler ID No. RID059741520.

57. Over the past decade, Shell has at times been categorized as either a Large Quantity Generator of hazardous waste or a Small Quantity Generator of Hazardous Waste at the Providence Terminal.

58. Since late February 2018, Shell has been categorized as a Large Quantity Generator of hazardous waste at the Providence Terminal. *See* EPA, 2017 BR/Notification for Shell Oil Products US - Providence Terminal, Site ID RID059741520 (Feb 22, 2018).

59. As a generator of hazardous waste and due to the presence of hazardous waste constituents at the Providence Terminal, Shell must comply with applicable Rhode Island RCRA regulations at R.I. Admin. Code 25-15-102:5.0 entitled “Generators.”

60. Hazardous waste constituents are defined in EPA regulations to include a wide variety of compounds and chemicals that are present at the Providence Terminal in wastes, as legacy contaminants, and in, or as a component of, the refined petroleum products handled and stored at the Providence Terminal.

61. The Providence Terminal’s marine transfer area is comprised of two mooring areas and two product transfer areas. The Providence Terminal is equipped to dock two vessels simultaneously. Product is transferred via the dock or via a ten-bay truck rack.

62. The Providence Terminal operates 24 hours per day, 7 days per week.

63. Defendants are, and/or have been, responsible for the operation and maintenance of the Providence Terminal, including compliance with the Permit.

II. The Providence River

64. The Providence Terminal is located on the shore of the Providence River, in the Providence Harbor, at the head of Narragansett Bay.

65. Narragansett Bay is New England's largest estuary, comprised of nearly 147 square miles, serving as a critical habitat for thousands of species, and a backyard to approximately 887,863 Rhode Island residents. *See Save the Bay, Facts and Figures About Narragansett Bay* (2017), <http://www.savebay.org/bayfacts> (last visited Oct. 24, 2017). The Bay attracts an estimated 100,000 fishermen and twelve million tourists annually. *See Save the Bay, Discover Your Bay*, <http://www.savebay.org/discover> (last visited Oct. 24, 2017).

66. As of 2015, the Rhode Island commercial (including imports) and recreational fishing industries provide for 4,831 jobs and 3,354 jobs respectively. *See National Oceanic and Atmospheric Administration ("NOAA"), Fisheries Econ. in the U.S. 2015*, at 94, 75 (May 2017) http://www.st.nmfs.noaa.gov/Assets/economics/publications/FEUS/FEUS-2015/Report-Chapters/FEUS%202015-AllChapters_Final.pdf. In 2015, commercial fishing contributed approximately \$167 million to Rhode Island's economy, and recreational fishing contributed approximately \$217 million. *Id.* at 8, 11.

67. Narragansett Bay contributes \$100 million annually to the local recreational fishing economy and supports tens of thousands of tourism related jobs. *See EPA Off. of Res. and Dev. & New England Reg'l Off., Striving for Balance in the Narragansett Bay Watershed: EPA's Triple Value Simulation (3VS) Model* (Jan. 2013), <https://www.epa.gov/sites/production/files/2013-12/documents/3vs-tool-nutrient-mgt-narr-bay.pdf>. According to DEM, Narragansett Bay's "annual contribution to Rhode Island's economy totals billions of dollars," and "[i]ts environmental and aesthetic value is priceless."

Introduction to Narragansett Bay, Rhode Island DEM, <http://www.dem.ri.gov/programs/emergencyresponse/bart/nbay.php> (last visited July 31, 2019).

68. The health of Narragansett Bay has steadily improved over the last decade due in part to a largescale Combined Sewer Overflow (“CSO”) project undertaken by the Narragansett Bay Commission (“NBC”). See NBC, *Evaluation of CSO Phase I Project: Water Quality Outcomes* (Apr. 21, 2016),

<http://snapshot.narrabay.com/app/Services/MossFile.ashx?file=/s/emda/snapshot/Documents/Narragansett%20Bay%20Commission%20CSO%20Phase%20I%20Report.pdf>. The NBC reports that as of 2014, the project had prevented the discharge of 6.15 billion gallons of sewage from entering Narragansett Bay and led to a 50% reduction in fecal coliform bacteria load annually. *Id.* at 1.

69. According to DEM Director Janet Coit, stormwater pollution still remains a challenge for the region. In a 2015 article, she stated, “[i]t’s going to require a lot of small actions,” and, “[w]e can’t deal with stormwater with just big tunnels.” Frank Carini, *Urb. Runoff Fouls Econ. Opportunities*, ECORI (Nov. 4, 2015),

<https://www.ecori.org/pollution-contamination/2015/11/4/urban-runoff-fouls-swimming-and-fishing-opportunities>.

70. The 2015 Watershed Counts report, produced by the University of Rhode Island (“URI”) Coastal Institute, the Narragansett Bay Estuary Program, and EPA, highlighted the negative impacts of stormwater runoff caused by the urbanization of the watershed. See Watershed Counts, *Cities by the Bay: Narragansett Bay Watershed Report with a Spotlight on Urban Waters* (2015), http://watershedcounts.org/documents/Watershed_Counts_Report_2015.pdf. Over one thousand people live per square mile along Narragansett Bay, resulting in 56% of the

watershed being classified as urban. *Id.* at 7. The report cautions that urban ports are currently one of the sources of “pollution and degradation of our urban waters; innovative solutions are needed to reduce their impact.” *Id.* at 5. The report further highlights that urban ports are threatened by rising seas and coastal storms, and are responding accordingly:

[p]orts around the world are starting to plan in new ways to be more resilient in the face of climate change. This ranges from updating emergency response and land use plans to discussing how vulnerable structures can be moved to a safer place within ports or perhaps even moved to a remote location in the surrounding community . . . ports need to look to the future to avoid drowning in place.

Id. at 20.

III. Shell’s Clean Water Act Permit

71. Shell operates the Providence Terminal pursuant to an individual permit issued by DEM under the RIPDES permit program, R.I. Gen. Laws Chapters 46-12, 42-17.1, and 42-35. Shell operates subject to Permit No. RI0001481, a version of which issued on February 14, 2011, becoming effective on April 1, 2011. That version was administratively continued until a new permit issued on January 30, 2019, becoming effective March 1, 2019. The 2019 version of the Permit will expire on March 1, 2024.

72. The Permit authorizes Shell, subject to certain conditions, to discharge stormwater runoff, groundwater, holding pond drainage, hydrostatic/hydraulic test water, and treated tank bottom draw-off water.

73. The receiving water identified in the Permit is the Providence River (Narragansett Basin/Providence River Subbasin/Waterbody ID Number RI0007020E-01B), a tidal river that flows through the communities of Providence, East Providence, Cranston, Warwick, and Barrington on its way to Narragansett Bay.

74. The upper half of the Providence River, where the Providence Terminal is located, is a Class SB1{a} waterbody “designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value.” R.I. Code R. 25-16-25:8(B)(2)(c).

75. The *State of Rhode Island 2014 303(d) List, List of Impaired Waters FINAL* identifies the upper Providence River (Waterbody ID Number RI0007020E-01B) as one of the waterways within Rhode Island that is impaired. DEM Off. of Water Res., *2014 303(d) List of Impaired Waters FINAL* (2015), <http://www.dem.ri.gov/pubs/303d/303d14.pdf>.

76. The Permit includes conditions and limitations controlling Shell’s discharges at the Providence Terminal.

77. The Permit authorizes discharges from the Providence Terminal through three stormwater discharge outfalls to the Providence River: Outfalls 001A, 002A, and 003A. The Permit includes conditions that specify the required operation of the stormwater system, including specific conditions, limitations, and monitoring and reporting requirements governing the discharge from each outfall.

78. Stormwater and groundwater accumulated in the West Side Tank Farm is collected by drainage swales, pipes, and pumps and directed to a collection/retention pond and pumped through an eight-inch pipeline to an oil/water separator prior to discharge to the Providence River through Outfall 001A.

79. Stormwater accumulated in the East Side Tank Farm is collected by drains and pipes, directed to an oil/water separator and a holding pond, and then discharged to the Providence River through Outfall 002A.

80. The stormwater accumulated from the paved parking area in the northwest corner of the East Side Tank Farm is collected in catch basins, directed through underground piping to an oil/water separator, and then discharged through Outfall 003A to the Providence River.

81. Though not authorized by the Permit, stormwater accumulated from an area of the Providence Terminal on the west side of Allens Avenue is collected in catch basins, directed through underground piping to a connection with the City of Providence stormwater drainage system, and then, based on information and belief, discharged through a stormwater pipe under the east side of the Providence Terminal to the City of Providence stormwater outfall into the Providence River.

82. Though not authorized by the Permit, runoff flows down an embankment located on the Providence Terminal property directly into the Providence River. *See* Ex. D.

83. Shell is required to have a stormwater pollution prevention plan in place at the Providence Terminal:

A Storm Water Pollution Prevention Plan (SWPPP) shall be maintained and implemented by the permittee. The SWPPP shall be prepared in accordance with good engineering practices and identify potential sources of pollutants, which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility.

2011 Permit Part I.C.1, Ex. A at 12; 2019 Permit Part I.C.1, Ex. L at 16.

84. The Permit requires that “[i]n addition, the SWPPP shall describe and ensure the implementation of Best Management Practices (BMPs) which are to be used to reduce or eliminate the pollutants in storm water discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit.” 2011 Permit Part I.C.1, Ex. A at 12; 2019 Permit Part I.C.1, Ex. L at 16.

85. The Permit requires that

[t]he SWPPP in Part I.C. shall specifically address the adequacy of containment of leaks and spills in storage areas (from Drums, Additive Tanks, Petroleum Product Tanks, etc.) and truck loading area(s). Adequate containment must exist at these locations so as to prevent untreated discharges from reaching any surface water.

2011 Permit Part I.B.5, Ex. A at 11; 2019 Permit Part I.B.5, Ex. L at 15.

86. The Permit requires that

[t]he permittee shall immediately amend the SWPPP whenever there is a change in design, construction, operation, or maintenance, which has a significant effect of [sic] the potential for the discharge of pollutants to the waters of the State; a release of reportable quantities of hazardous substances and oil; or if the SWPPP proves to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. Changes must be noted and then submitted to DEM. Amendments to the SWPPP may be reviewed by DEM in the same manner as Part I.C.3. of this permit.

2011 Permit Part I.C.4, Ex. A at 12; 2019 Permit Part I.C.4, Ex. L at 16.

87. When any new or amended SWPPP is signed, the Permit requires Shell to certify that, among other things, “the information submitted is, to the best of [one’s] knowledge and belief, true, accurate, and complete.” R.I. Code R. 25-16-14:12(d); 40 C.F.R. § 122.22(d); 2011 Permit Part I.C.2, Ex. A at 12; 2019 Permit Part I.C.2, Ex. L at 16.

88. Shell has failed to consider and address the factors described in Section IV.A, *infra*, and the substantial risks of pollutant discharges associated with those factors, in its SWPPP, as more fully set forth below.

89. The SWPPP³ states that “[t]he oil/water separators are is [sic] inspected quarterly for both sludge layer and oil layer and cleaned-out as appropriate” and that “[t]he storm water collection

³ While Shell submitted an updated SWPPP following issuance of the new RIPDES permit in March of 2019, the language cited here remains unchanged.

ponds are also inspected quarterly for excessive sediment build-up or evidence of erosion, and corrective action taken as needed.” SWPPP § 4.9, at 19.

90. The separator and ponds are routinely dirty, and show no signs of regular cleaning or maintenance. Examples of this are attached at Exhibits D and E (the content of Exhibit E was attached to CLF’s Notice Letter as Appendix A and the contents of Exhibit D and Exhibit E were also attached to CLF’s Supplemental Notice Letter as Appendix A.).

91. The Permit contains “monitor and report” requirements for numerous pollutant parameters for Outfalls 001A and 002A. *See* 2011 Permit Part I.A, Ex. A at 2-4; 2019 Permit Part I.A, Ex. L at 7-9.

92. The Permit requires Shell to “assure that all wastewater testing required by this permit, is performed in conformance with the method detection limits listed below” 2011 Permit Part I.D, Ex. A at 17; 2019 Permit Part I.D, Ex. L at 21.

93. The relevant method detection limits (“MDLs”) specified in the Permit are:

Benzene	1.0 ug/l
Toluene	1.0 ug/l
Ethylbenzene	1.0 ug/l
Total Xylenes	0.5 ug/l
Acenaphthene	1.0 ug/l
Acenaphthylene	1.0 ug/l
Anthracene	1.0 ug/l
Benzo(a)anthracene	0.013 ug/l
Benzo(a)pyrene	0.023 ug/l
Benzo(b)fluoranthene ⁴	0.018 ug/l
Benzo(ghi)perylene	2.0 ug/l
Benzo(k)fluoranthene	0.017 ug/l
Chrysene	0.15 ug/l
Dibenzo(a,h)anthracene	0.03 ug/l
Fluoranthene	1.0 ug/l
Fluorene	1.0 ug/l

⁴ Referred to in the MDL table on page 18 of Exhibit A, and page 22 of Exhibit L, as “3,4-benzofluoranthene.”

Indeno(1,2,3-cd)pyrene	0.043 ug/l
Naphthalene	1.0 ug/l
Phenanthrene	1.0 ug/l
Pyrene	1.0 ug/l

2011 Permit Part I.D, Ex. A at 18, 19; 2019 Permit Part I.D, Ex. L at 21-22.

94. The Permit also states that “all sample results shall be reported as: an actual value, ‘could not be analyzed,’ less than the reagent water MDL, or less than an effluent or sludge specific MDL.” 2011 Permit Part I.D, Ex. A at 17; 2019 Permit Part I.D, Ex. L at 21.

95. As summarized in Exhibit F (the content of Exhibit F was attached to CLF’s Notice Letter as Appendix B and, the content of Exhibit F was attached to CLF’s Supplemental Notice Letter as Appendix B), Shell has often reported on its Discharge Monitoring Reports (“DMRs”) that the concentration of pollutants in the samples analyzed was “<1” ug/L. Reporting “<1” ug/L indicates that the MDL Shell is using for the pollutants is one ug/L, and the amount of pollutant in the analyzed samples was below the detection limit of one ug/L.

96. The MDL expressly required in the Permit for total xylenes, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene is not “one” ug/L; it is 0.5, 0.013, 0.023, 0.018, 0.017, 0.15, 0.03, and 0.043, ug/L respectively—all values below one. For these pollutant parameters, reporting “<1” ug/L is a violation of the Permit.

97. The Permit requires the following regarding sampling for “oil and grease” and “TSS:”

Two (2) samples shall be taken during wet weather and one (1) during dry weather. Wet weather samples must be collected during the first 30 minutes from discharges resulting from a storm event that is greater than 0.1 inch of rainfall in a 24-hour period and at least 72 hours from the previously measurable (greater than 0.1 inch of rainfall in a 24-hour period) storm event. If this is not feasible, wet weather samples may be taken within the first hour of discharge and noted on the Discharge Monitoring Report.

2011 Permit Part I.A.1 n.1, Ex. A at 4; 2019 Permit Part I.A.1 n.1, Ex. L at 9.

98. As summarized in Exhibit G (the content of Exhibit G was attached to CLF's Notice Letter as Appendix C, Table 1 and the content of Exhibit G was attached to CLF's Supplemental Notice Letter as Appendix C, Table 1), the DMRs for the Providence Terminal regularly indicate that samples were not taken in compliance with this Permit requirement.

99. For monitored pollutants other than "oil and grease" and "TSS", the Permit requires that

[o]ne sample shall be taken during the first 30 minutes of discharge from a storm event that is greater than 0.1 inch of rainfall in a 24-hour period and at least 72 hours from the previously measurable (greater than 0.1 inch of rainfall in a 24-hour period) storm event; if this is not feasible, it may be taken within the first hour of discharge and noted on the Discharge Monitoring Report.

2011 Permit Part I.A.1 n.2, Ex. A at 4; 2019 Permit Part I.A.1 n.2, Ex. L at 49.

100. As summarized in Exhibit H (the content of Exhibit H was attached to CLF's Notice Letter as Appendix C, Table 2 and the content of Exhibit H was attached to CLF's Supplemental Notice Letter as Appendix C, Table 2), the DMRs for the Providence Terminal regularly indicate that samples were not taken in compliance with this Permit requirement.

101. For all pollutant monitoring, Shell is required to document specific storm characteristics on the DMRs. Specifically, the Permit requires that

[i]n addition to the required sampling results submitted in accordance with Parts I.A.1. and I.A.3. of this permit, the permittee must provide the date and duration (hours) of the storm event sampled, the total depth of rainfall (inches), and the total volume of runoff (Ft³). This information must be submitted with the Discharge Monitoring Report forms at the frequency specified in Part I.E.2 of this permit.

2011 Permit Part I.A.4.d, Ex. A at 8; 2019 Permit Part I.A.3.d, Ex. L at 12.

102. As summarized in Exhibit I (the content of Exhibit I was attached to CLF's Supplemental Notice Letter as Appendix C, Table 3), the DMRs for the Providence Terminal indicate that the information required under this Permit provision was not recorded and/or provided.

103. For all pollutant monitoring, if adverse climatic conditions prevent samples from being collected in a given period, Shell is required to submit an explanation as to why, and may only exercise this waiver once in a two-year period. Specifically, the Permit requires that

[i]f the permittee is unable to collect samples due to adverse climatic conditions which make the collections of samples dangerous or impractical, the permittee must submit, in lieu of sampling data, a description of why samples could not be collected, including available precipitation data for the monitoring period. The permittee can only exercise this waiver once in a two (2) year period for outfalls designated 001A, 002A, and 003A.

2011 Permit Part I.A.4.e, Ex. A at 8; 2019 Permit Part I.A.3.e, Ex. L at 12.

104. As summarized in Exhibit J (the content of Exhibit J was attached to CLF's Supplemental Notice Letter as Appendix C, Table 4), the DMRs for the Providence Terminal indicate that Shell is over-utilizing this waiver requirement, in violation of the Permit's prohibition on using the waiver more than once in a two-year period.

105. The Permit includes a condition entitled "Recordkeeping and Internal Reporting Procedures" that states:

Incidents such as spills, or other discharges, along with *other information describing the quality and quantity of storm water discharges* must be included in the records. All inspections and maintenance activities must be documented and maintained on site for at least five (5) years.

2011 Permit Part I.C.5.b.11, Ex. A at 16 (emphasis added); 2019 Permit Part I.C.5.b.11, Ex. L at 19-20 (emphasis added).

106. Because all discharges through Outfall 001A and some discharges through Outfall 002A are pump controlled, *see* 2011 Permit Statement of Basis, Ex. A at 23; 2019 Permit Statement of Basis, Ex. L at 28, Shell must take samples at those locations within the first 30 minutes of discharge associated with pumping and keep records of all pump operations to be in compliance

with the Permit. *See* 2011 Permit Part I.A.1 n.1-2, Ex. A at 4; 2019 Permit Part I.A.1 n.1-2, Ex. L at 9.

107. The DMRs do not indicate that monitoring is occurring during pumped discharges at all, let alone during the first 30 minutes after the pumps are activated.

108. Shell's failure to comply with the sampling requirements in its Permit distorts the sampling results it does report.

109. As summarized in Exhibit K (the content of Exhibit K was attached to CLF's Supplemental Notice Letter as Appendix C, Table 5), Shell's failure to comply with the sampling requirements in its Permit also causes its certifications that the information contained in its DMRs is "true, accurate, and complete" to be unlawful.

110. To be effective, stormwater monitoring must be conducted when the runoff first begins, as this is when the highest concentration of pollutants washes off of the facility and into the Providence River. It is during this time that Shell must demonstrate compliance with the terms and conditions of its Permit that have been imposed to limit the amount of pollutants in Shell's discharge and protect the Providence River.

111. When Shell fails to sample at the time and under the conditions specified in the Permit, it fails to capture an accurate picture of the pollution discharging from its facility.

112. The Permit states: "[d]ischarges which cause a violation of water quality standards are prohibited." 2011 Permit Part II(o), Ex. A at 40; 2019 Permit Part II(o), Ex. L at 53.

113. The State water quality standards for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene are well below "1" ug/L. *See* R.I. Code R. 25-16-25, Appendix B, Table 1 (DEM Ambient Water Quality Criteria and Guidelines).

114. Upon information and belief, Shell is violating Rhode Island water quality standards, at a minimum, on the days in which Shell has reported “<1” ug/L for the parameters listed above. *See supra*, ¶ 95.

115. The Permit states that “[t]he discharge shall not cause visible discoloration of the receiving waters” and “[t]he effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.” 2011 Permit Part I.A.4.b & I.A.4.c, Ex. A at 8; 2019 Permit Part I.A.3.b & I.A.3.c, Ex. L at 12.

116. State water quality standards prohibit any “sludge deposits, solid refuse, floating solids, oil, grease, scum” in Class SB1 {a} waterbodies, including the relevant portion of the Providence River. R.I. Code R. 25-16-25:8, Table 2.8.D.(3).

117. There have been past and ongoing discharges and/or releases associated with the Providence Terminal that result in a visible oil sheen at the Providence Terminal outfalls and in the Providence River.

118. A 2012 Emergency Response Report, filed with the DEM Division of Compliance and Inspection, stated that “oil has been coming out into the Providence River [near one of the outfalls],” Jill Eastman, Investigator, State of R.I. & Providence Plantations Dep’t of Env’tl. Mgmt., *Emergency Response Rep.* (Feb. 23, 2012); *see also infra*, ¶ 161, in violation of the Permit.

119. The Permit requires that “[t]he wastewater collection and treatment system shall be operated and maintained in order to provide optimal treatment of the wastewaters prior to discharge to the receiving water.” 2011 Permit Part I.B.4, Ex. A at 11; 2019 Permit Part I.B.4, Ex. L at 15.

120. The current condition of the Providence Terminal wastewater collection and treatment system does not comply with this provision of the Permit.

121. The Providence Terminal outfall pipes, which discharge directly into the Providence River, are in disrepair.

IV. Pollutant Discharges and/or Releases from the Providence Terminal

122. Shell has failed to design and operate the Providence Terminal, including, but not limited to, its wastewater treatment system, in accordance with good engineering practices and otherwise in accordance with the mandatory conditions of the Permit, which are intended to prevent the discharge and/or release of pollutants from the Providence Terminal in amounts or concentrations greater than allowed under the Permit.

123. Because Shell has not designed and operated the Providence Terminal in accordance with good engineering practices, the Providence Terminal has discharged and/or released, and is likely to discharge and/or release, pollutants in amounts or concentrations greater than allowed under the Permit due to, including, but not limited to, inadequate infrastructure design and infrastructure failures.

124. The Providence Terminal has not been designed or modified to address pollutant discharges and/or releases due to precipitation and/or flooding; specifically, the Providence Terminal is likely to discharge and/or release pollutants into surrounding waters, groundwater, the community, and the air because it has not been designed to withstand precipitation and/or flooding associated with tides, storm events and storm surge, sea level rise, and increasing sea surface temperatures.

125. The location, elevation, and lack of preventative infrastructure at the Providence Terminal make it especially vulnerable to these risks.

A. Factors Causing and/or Contributing to the Substantial Risk of Pollutant Discharges and/or Releases from the Providence Terminal

126. In addition to the violations set forth above, Shell has discharged and/or released pollutants from the Providence Terminal in amounts or concentrations greater than allowed under the Permit, in violation of the Permit and the Clean Water Act, and will likely continue to do so, due to, including, but not limited to, infrastructure failures and inadequate infrastructure design.

127. Shell has failed to use good engineering practices at the Providence Terminal because it has not designed the Providence Terminal, including, but not limited to, the wastewater treatment system, to address precipitation and/or flooding, which is exacerbated by storms and storm surges, sea level rise, and increasing sea surface temperatures.

128. Climate change has further exacerbated and continues to exacerbate precipitation events and flooding, in part because warmer air holds more moisture, higher sea surface temperatures cause stronger storms and higher storm surges, and melting sea ice raises sea levels.

129. In *Massachusetts v. Environmental Protection Agency*, the Supreme Court recognized “the enormity of the potential consequences associated with manmade climate change” and “[t]he risk of catastrophic harm.” 549 U.S. 497, 525-26 (2007). “The harms associated with climate change are serious and well recognized.” *Id.* at 521.

130. Shell has long been well aware of the present impacts and risks of climate change.

131. Shell takes the following public policy position on climate change: “[w]e have recognised the importance of the climate challenge for a long time now, and we share our knowledge, experience and understanding of the energy system with policymakers.” Shell Global, *Climate Change – Public Policy Position*, <http://www.shell.com/sustainability/sustainability-reporting->

and-performance-data/performance-data/greenhouse-gas-emissions/climate-change-public-policy-position.html (last visited Oct. 24, 2017).

132. According to Shell, “[w]e were one of the first energy companies to recognise the climate change threat and to call for action.” Royal Dutch Shell plc, *Responsible Energy Sustainability Rep.*, at 12 (2008),

<https://www.unglobalcompact.org/system/attachments/1307/original/COP.pdf?1262614257>.

133. In 1991, Shell published a twenty-eight minute educational film entitled “Climate of Concern,” which warned about the risks of climate change. *See* Damian Carrington & Jelmer Mommers, ‘Shell Knew’: Oil Giant’s 1991 Film Warned of Climate Change Danger, THE GUARDIAN (Feb. 28, 2017), <https://www.theguardian.com/environment/2017/feb/28/shell-knew-oil-giants-1991-film-warned-climate-change-danger>. Shell claimed the warning about climate change was “endorsed by a uniquely broad consensus of scientists in their report to the United Nations at the end of 1990.” *Id.* The film says that, “global warming is not yet certain, but many think that to wait for final proof would be irresponsible. Action now is seen as the only safe insurance.” *Id.*

134. Shell is a participant in numerous international initiatives related to climate change, including, but not limited to: founding member of the International Emissions Trading Association (1999); Carbon Disclosure Project (participation since 2003); World Business Council for Sustainable Development; Prince of Wales Corporate Leaders Group on Climate Change (2005-2015), “Communiqué series,” 2012 and 2014 Communiqués; World Bank: 2014 Carbon Pricing Statement, 2015 Zero Routine Flaring by 2030 Initiative, and Carbon Pricing Leadership Coalition; Global CCS Institute; 2015 Oil and Gas Climate Initiative; Paying for Carbon Coalition – 2015: letter of six CEOs to Ms. Christina Figueres, Executive Secretary of

the UNFCCC; Energy Transitions Commissions; and Taskforce for Climate-Related Financial Disclosures. Shell Global, *Climate Change – Public Policy Position, Our Efforts*, <http://www.shell.com/sustainability/sustainability-reporting-and-performance-data/performance-data/greenhouse-gas-emissions/climate-change-public-policy-position.html> (last visited Oct. 24, 2017).

135. For over 40 years, Shell has claimed to develop “scenarios” in order to “make crucial choices in uncertain times and tackle tough energy and environmental issues.” Shell Global, *Earlier Scenarios*, <http://www.shell.com/energy-and-innovation/the-energy-future/scenarios/new-lenses-on-the-future/earlier-scenarios.html> (last visited Oct. 24, 2017). Since the 1990s, Shell claims to have “helped other organisations in developing their own scenarios in various subject areas,” including “climate change with the Intergovernmental Panel on Climate Change [(“IPCC”)].” Peter Knight, *Profits and Principles – does there have to be a choice? The Shell Rep. 1998*, at 25 (1998), http://www.shell.com/sustainability/sustainability-reporting-and-performance-data/sustainability-reports/previous/_jcr_content/par/expandablelist/expandablesection_332888471.stream/1454157664246/7419d7c0b96ee36e92059e205107e3106d35d9d8f3a4909c8523f49ded9e4727/shell-sustainability-report-1998-1997.pdf.

136. The IPCC “was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988 to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts.” IPCC, *Organization*, <http://www.ipcc.ch/organization/organization.shtml> (last visited Oct. 24, 2017).

137. Shell has contributed its “scenarios” to IPCC Assessment Reports and Special Reports since as early as 1995 and as recently as 2014.

138. Shell scientists have contributed to IPCC Assessment Reports in the capacities of Reviewer, Contributing Author, Expert Reviewer, and Lead Author since the Second Assessment Report and up until the most recent Fifth Assessment Report. Shell scientists served in Working Groups I and III on the topics of Scientific Basis and Mitigation of Climate Change, respectively.

139. Shell scientists have further contributed to IPCC Special Reports, including working on the 1994 report entitled *Radiative Forcing of Climate Change and An Evaluation of the IPCC IS92 Emission Scenarios*, https://www.ipcc.ch/pdf/special-reports/cc1994/climate_change_1994.pdf; the 2000 report entitled *Emissions Scenarios*, https://www.ipcc.ch/ipccreports/sres/emission/emissions_scenarios.pdf; the 2000 report entitled *Methodological and Technological Issues in Technology Transfer*, <http://www.ipcc.ch/ipccreports/sres/tectran/index.php?idp=0>; and the 2005 report entitled *Carbon Dioxide Capture and Storage*, https://www.ipcc.ch/pdf/special-reports/srccs/srccs_wholereport.pdf.

140. Shell’s decades-long development of scenarios suggests an embedded company practice of preparedness. Shell claims that the scenarios have “helped us anticipate and adapt to momentous events like the oil shocks of the 1970s, the collapse of communist Europe in 1989, the surge in world energy demand and the threat of climate change.” Shell Global, *Earlier Scenarios*, <http://www.shell.com/energy-and-innovation/the-energy-future/scenarios/new-lenses-on-the-future/earlier-scenarios.html> (last visited Oct. 24, 2017).

141. Shell was an early member of the Global Climate Coalition (“GCC”), but withdrew its membership in April 1998 when the GCC began lobbying against establishing legally binding

targets and timetables in the Kyoto Protocol, which developed milestones aimed to reduce CO₂ emissions. *See Profits and Principles – does there have to be a choice? The Shell Rep. 1998*, at 41.

142. According to Shell, “[t]he main disagreement centred on the Kyoto protocol which aims to cut overall greenhouse gas emissions by 5% by the year 2012. The GCC is actively campaigning against legally binding targets and timetables as well as ratification by the US government. The Shell view is that prudent precautionary measures are called for.” *Id.*

143. Shell has since continued to publicly reiterate its support for international agreements, such as the Kyoto Protocol and the Paris Climate Agreement. *See* Chris Noon, *Shell CEO Targets Washington Over Kyoto*, FORBES (Dec. 5, 2006) (Former Shell CEO Jeroen van der Veer on the Kyoto Protocol: “For us as a company, the debate about CO₂ is over. We’ve entered a debate about what we can do about it.”), https://www.forbes.com/2006/12/05/shell-kyoto-ceo-face-cx_cn_1205autofacescan02.html; Samantha Raphelson, *Energy Companies Urge Trump to Remain in Paris Climate Agreement*, NPR (May 18, 2017) (Shell CEO Ben Van Beurden on the Paris Climate Agreement: “We believe climate change is real;” “We believe that the world needs to go through an energy transition to prevent a very significant rise in global temperatures. And we need to be part of that solution in making it happen.”), <http://www.npr.org/2017/05/18/528998592/energy-companies-urge-trump-to-remain-in-paris-climate-agreement>.

144. Regardless of the cause, as summarized in the Third National Climate Assessment, climate change is currently impacting human and environmental health and welfare.

145. “Global climate is changing and this is apparent across the U.S. in a wide range of observations. The global warming of the past 50 years is primarily due to human activities,

predominantly the burning of fossil fuels.” J. M. Melillo et al. eds., *Third Nat’l Climate Assessment*, at 15 (2014),

http://s3.amazonaws.com/nca2014/low/NCA3_Climate_Change_Impacts_in_the_United%20States_LowRes.pdf?download=1.

146. “Some extreme weather and climate events have increased in recent decades, and new and stronger evidence confirms that some of these increases are related to human activities.” *Id.*

147. “Human-induced climate change is projected to continue, and it will accelerate significantly if global emissions of heat-trapping gases continue to increase.” *Id.*

148. “Impacts related to climate change are already evident in many sectors and are expected to become increasingly disruptive across the nation throughout this century and beyond.” *Id.*

149. “Climate change threatens human health and well-being in many ways, including through more extreme weather events and wildfire, decreased air quality, and diseases transmitted by insects, food, and water.” *Id.* at 16.

150. “Infrastructure is being damaged by sea level rise, heavy downpours, and extreme heat; damages are projected to increase with continued climate change.” *Id.*

151. “Water quality and water supply reliability are jeopardized by climate change in a variety of ways that affect ecosystems and livelihoods.” *Id.*

152. “Ecosystems and the benefits they provide to society are being affected by climate change. The capacity of ecosystems to buffer the impacts of extreme events like fires, floods, and severe storms is being overwhelmed.” *Id.* at 17.

153. “Ocean waters are becoming warmer and more acidic, broadly affecting ocean circulation, chemistry, ecosystems, and marine life.” *Id.*

154. “Planning for adaptation (to address and prepare for impacts) and mitigation (to reduce future climate change, for example by cutting emissions) is becoming more widespread, but current implementation efforts are insufficient to avoid increasingly negative social, environmental, and economic consequences.” *Id.*

155. These impacts, which exacerbate the risk of pollutant discharges and/or releases from precipitation and/or flooding, have already occurred, are continuing to occur, and are certain to worsen over time.

156. “There is strong scientific consensus that carbon dioxide in the atmosphere warms the air and sea surface, accelerates sea level rise, makes the ocean more acidic, causes shifts in precipitation and weather patterns, and leads to more extreme weather events, among other effects.” R.I. Coastal Res. Mgmt. Council (“CRMC”), *R.I. Ocean Special Area Mgmt. Plan* (“*RI Ocean SAMP*”), Vol. 1, Ch. 3: *Global Climate Change*, at 5 (2010), http://seagrant.gso.uri.edu/oceansamp/pdf/samp_approved/300_GlobalClimateChange_APPROVED_5.4_Clean.pdf.

157. “These effects are already being witnessed globally and in Rhode Island and are projected to intensify in years to come.” *Id.*

158. “Infrastructure will be increasingly compromised by climate-related hazards, including sea level rise, coastal flooding, and intense precipitation events.” *Third Nat’l Climate Assessment*, Ch. 16: Northeast, at 379.

1. Precipitation

159. Severe or intense precipitation events have caused, contributed to, and will continue to cause and contribute to pollutant discharges and/or releases from the Providence Terminal due to, including, but not limited to, inadequate infrastructure design and infrastructure failure.

160. Public records associated with the Providence Terminal acknowledge that its stormwater drainage and treatment system cannot effectively handle large precipitation events, even as these events are increasing in frequency and duration.

161. In a 2010 Emergency Response Report documenting a heavy rain event resulting in a spill, DEM Investigator John Leo states: “I checked the area around the facility and discovered a heavy sheen coming out of several storm drains along the shore. This was due to the heavy rains over the last few days the spill was coming out of the drains so fast that booms will not work and the conditions are not conducive to using absorbent pads and booms on the sheen.” John Leo, Investigator, State of R.I. & Providence Plantations Dep’t of Env’tl. Mgmt., *Emergency Response Rep.* (Apr. 5, 2010).

162. The heavy rains referenced in the *Emergency Response Report* had occurred a full week earlier, on March 29 and 30. *See* NOAA & Nat’l Ctrs. for Env’tl. Info., *Rec. of Climatological Observations, Providence, RI*.

163. According to DEM in issuing the Permit, “[t]he circumstances at the facility have not substantially changed since the issuance of the last RIPDES permit” 2011 Permit Statement of Basis, Ex. A at 27; 2019 Permit Statement of Basis, Ex. L at 34.

164. The annual amount of precipitation in Rhode Island has increased by 6-11% since 1970. *See* R.I. Exec. Climate Change Coordinating Council (“EC⁴”), 2017 EC⁴ Ann. Rep., at 32 (Aug.

2017), <http://climatechange.ri.gov/documents/ec4ar17.pdf>. Additionally, “the frequency and magnitude of extreme precipitation events has increased.” *Id.*

165. From 1958 to 2012, the annual amount of precipitation falling in very heavy events (defined as the heaviest one percent of all daily events) increased by 71% in Rhode Island and Massachusetts. See Narragansett Bay Estuary Program, *The State of Narragansett Bay and Its Watershed Technical Rep.*, at 63 (2017), <http://nbep.org/01/wp-content/uploads/2017/09/State-of-Narragansett-Bay-and-Its-Watershed.pdf>. “An increased intensity of precipitation events has become the norm.” *Id.*

166. Warmer temperatures result in higher amounts of precipitation because warmer air holds more moisture. “Between 1895 and 2011, temperatures in the Northeast increased by almost 2°F (0.16°F per decade), and precipitation increased by approximately five inches, or more than 10% (0.4 inches per decade).” *Third Nat’l Climate Assessment*, Ch. 16: Northeast at 373.

167. “The impacts of climate change, from rising sea levels to more extreme rainfall events, are already being felt in Rhode Island, like elsewhere in New England. It is widely accepted that action is needed now, not just in the future.” EC⁴, *2016 EC⁴ Ann. Rep.*, at 4 (June 2016), <http://climatechange.ri.gov/documents/ar0616.pdf>.

168. “Climate change is expected to result in more frequent heavy rains, affecting stream flow in Northeastern states, with increases in 3-day peak flows contributing to increases in flooding risks.” *Id.* at 40.

169. “More intense storms, bringing more precipitation in short periods of time, will also require increased capacity of stormwater facilities adjacent to coastal infrastructure supporting port facilities.” *RI Ocean SAMP, Vol. 1, Ch. 3: Global Climate Change* at 45.

170. In 1986, Shell circulated an internal report labeled “Confidential” and titled *The Greenhouse Effect*. The report’s summary states that “[m]an-made carbon dioxide, released into and accumulated in the atmosphere, is believed to warm the earth through the so-called greenhouse effect.” Shell Internationale Petroleum, *The Greenhouse Effect*, at 1 (1986), excerpt at <https://thecorrespondent.com/6286/if-shell-knew-climate-change-was-dire-25-years-ago-why-still-business-as-usual-today/692773774-4d15b476>. The report predicts the impacts of such warming, stating that “[m]athematical models of the earth’s climate indicate that if this warming occurs then it could create significant changes in sea level, ocean currents, precipitation patterns, regional temperature and weather.” *Id.* The report further acknowledges that “[w]ith fossil fuel combustion being the major source of CO₂ in the atmosphere, a forward looking approach by the energy industry is clearly desirable” *Id.*

171. A 2013 Shell scenario report addressed an impending “resource stress nexus” between increasing demand and decreasing supply of food, water, and energy, stating: “[c]limate change could lead to extreme weather conditions, such as lengthy droughts and torrential flooding that would impact agriculture and livelihoods. Water shortages could intensify social and political instability, provoke conflicts, and cause irreparable environmental damage.” Shell International BV, *New Lens Scenarios, A Shift in Perspective for a World in Transition*, at 11 (2013), http://www.shell.com/promos/english/_jcr_content.stream/1448477051486/08032d761ef7d81a4d3b1b6df8620c1e9a64e564a9548e1f2db02e575b00b765/scenarios-newdoc-english.pdf.

172. One year later, Shell released a report entitled *New Lenses On Future Cities*, which addressed “climate adaptation” in coastal cities—including Rotterdam, where climate change resiliency efforts to mitigate against flooding, heavy rains, and rising sea levels are under-way—demonstrating Shell’s extensive knowledge of the climate change challenges facing coastal

communities. Shell International BV, *New Lenses On Future Cities, A New Lens Scenarios Supplement*, at 13-15 (2014), http://www.shell.com/energy-and-innovation/the-energy-future/scenarios/new-lenses-on-future-cities/_jcr_content/par/textimage_1687505569.stream/1447854282580/c391a74670d29b3e8f4f64a70a6d5653fb1f9fbee0ede22dd2daccdb5cdab2c/newlensesonfuturecities-june-2014.pdf.

173. However, Shell has not taken action to address severe precipitation events at the Providence Terminal.

2. Flooding

174. Flooding in Rhode Island and the Providence area will cause and contribute to pollutant discharges and/or releases from the Providence Terminal due to, including, but not limited to, inadequate infrastructure design and infrastructure failure.

175. Flooding in Rhode Island and the Providence area has increased, is continuing to increase, and will only worsen over time, exacerbating the risk of pollutant discharges and/or releases from the Providence Terminal.

176. “Rhode Island has experienced a significant increase in both flood frequency and flood severity over the past 80 years. RI and throughout most of southern New England has experienced a doubling of the frequency of flooding and an increase in the magnitude of flood events.” *2016 EC⁴ Ann. Rep.* at 41.

177. “By mid-century, the 100-year flood is expected to occur more frequently than every 25 years in nearby Woods Hole, Mass., under the high emissions scenario. By late century, it is expected to occur more frequently than every two years.” *RI Ocean SAMP, Vol. 1, Ch. 3: Global Climate Change*, at 43 (citation omitted).

178. “When flooding overtops ports, there is large area of inland inundation because ports are typically built in flat, low-lying areas. Options for protection include, but are not limited to, elevating facilities, filling land, and/or installing shoreline protection structures.” *Id.* at 44 (citation omitted).

179. “[C]oastal infrastructure is more likely to be flooded by higher sea levels, and more coastal infrastructure will be exposed to higher wave loads and tidal fluxes, increasing fatigue and corrosion.” *Id.* at 41.

180. The Federal Emergency Management Agency (“FEMA”) has described the Metro Bay Region—which includes twenty-four miles of shoreline along Cranston, East Providence, Providence, and Pawtucket, including the Providence Terminal—as “the Achilles’ heel of the Northeast due to its vulnerability to flooding.” *Natural Hazards: Hurricanes, Floods, and Sea Level Rise in the Metro Bay Region, Special Area Mgmt. Plan, Analysis of Issues and Recommendations for Action*, at 4 (Sept. 2009),

<http://sos.ri.gov/documents/archives/regdocs/released/pdf/CRMC/5766.pdf>.

181. “Providence’s vulnerability to flooding stems from two main geographic features: its location at the head of Narragansett Bay and its low elevation downtown and along the port.” *RI Ocean SAMP, Vol. 1, Ch. 3: Global Climate Change* at 44.

182. “In 1954, the downtown [Providence] area was flooded by 12 feet of water. Damage is estimated to have been \$25.1 million, about \$134 million in 2000 dollars.” *Id.* (citation omitted).

183. According to CRMC, based on past patterns of flooding, FEMA’s National Flood Insurance Program has designated 14% of Rhode Island’s landbase as Special Flood Hazard Areas—areas with a 1% annual chance of flooding in a given year. *See CRMC, The State of R.I.*

Coastal Res. Mgmt. Program, As Amended, at Section 145, p. 5 (Dec. 2012), <http://www.crmc.ri.gov/regulations/RICRMP.pdf>.

184. The FEMA flood map for the area where the Providence Terminal is located, last revised in September 2013, shows that almost all of the Providence Terminal is within the flood hazard zone.

185. The portion of the Providence Terminal located to the east of Allens Avenue is designated as one of the “Special Flood Hazard Areas (SFHAs) Subject to Inundation by the 1% Annual Chance Flood.”

186. The 1% annual chance flood, also known as the base flood or 100-year flood, is the flood that has a 1% chance of being equaled or exceeded in any given year.

187. Most of the western portion of the Providence Terminal (to the west of Allens Avenue) is designated as “Other Flood Areas” on the FEMA flood map.

188. The FEMA flood map depicts the “Limit of Moderate Wave Action,” which “represents the approximate landward limit of the 1.5-foot breaking wave,” as located further inland than the group of tanks closest to the Providence River.

189. The Providence River’s shoreline has evolved over more than two centuries of development and landfill. From 1939 to 2003, the site containing the Providence Terminal’s East Side Tank Farm expanded by as much as 112.26 m (368.3 ft) into the Providence River. *See* CRMC, *Shoreline Change Maps, Narragansett Bay, R.I.: Providence, Fox Point Reach* (2003), http://www.crmc.ri.gov/maps/shorechange/Providence_Fox_Point_Reach.pdf.

190. Situated on backfill, the Providence Terminal is at risk from flooding exacerbated by storms and storm surges, sea level rise, and increasing sea surface temperatures.

a. *Storms and Storm Surge Contribute to Flooding*

191. Increasingly frequent and/or intense storm events and storm surges will cause and contribute to pollutant discharges and/or releases from the Providence Terminal due to, including, but not limited to, inadequate infrastructure design and infrastructure failure.

192. “People living in coastal flood zones are vulnerable to direct loss of life and injury associated with tropical storms and nor’easters. Flood damage to personal property, businesses, and public infrastructure can also result.” *Third Nat’l Climate Assessment*, Ch. 16: Northeast at 378.

193. “[I]t is *virtually certain* [i.e., there is a 99–100% probability] that intense tropical cyclone activity has increased in the North Atlantic since 1970.” See IPCC, *Climate Change 2014 Synthesis Rep. Fifth Assessment Rep.*, at 2 n.1, 53 (2014), http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf.

194. Coinciding with the increase in hurricanes has been “a substantial increase in most measures of Atlantic hurricane activity since the early 1980s, the period during which high-quality satellite data are available. These include measures of intensity, frequency, and duration as well as the number of strongest (Category 4 and 5) storms.” *Third Nat’l Climate Assessment* at 41.

195. Along the U.S. East Coast, “there has been a trend of increasing significant wave heights since at least the mid-1970s, with the trends being statistically significant at the 95% confidence level.” Paul Komar & Jonathan Allan, *Increasing Hurricane-Generated Wave Heights along the U.S. East Coast and Their Climate Controls*, JOURNAL OF COASTAL RESEARCH, at 487 (Mar. 2008), <http://users.clas.ufl.edu/adamsp/Outgoing/ForJJandLaura/Komar2008Journal%20of%20Coastal>

%20Research.pdf. Those positive trends in wave height along the East Coast have been linked to the increasing numbers of hurricanes. IPCC, *Managing the Risks of Extreme Events & Disasters to Advance Climate Change Adaptation: Special Rep. of the IPCC*, at 181 (2012), https://www.ipcc.ch/pdf/special-reports/srex/SREX_Full_Report.pdf.

196. The storm surge threat associated with nor'easters in New England is steadily increasing due to sea level rise. See Jeff Masters, *Climate Change Impact on Nor'easters: An Increased Storm Surge Threat*, WEATHER UNDERGROUND (Feb. 11, 2013), <https://www.wunderground.com/blog/JeffMasters/climate-change-impact-on-noreasters-an-increased-storm-surge-threat.html>. Moreover, “[w]intertime top 5% heavy precipitation events (both rain and snow) have increased over the Northeast U.S. in recent decades, so Nor’easters have been more of a threat to cause flooding problems and heavy snow events.” Jeff Masters, *The Future of Intense Winter Storms*, WEATHER UNDERGROUND (Mar. 3, 2010) (citation omitted), <https://api.wunderground.com/blog/JeffMasters/article.html?entrynum=1441&MR=1>.

197. “The impacts of climate change upon Rhode Island’s built and natural environments are wide-ranging, discernible and documented, and, in many cases growing in severity. The climatological sciences with increasing temporal and spatial accuracy project substantial future impacts upon Rhode Island, including stronger, more frequent hurricanes and Nor’easters, greater frequency of other extreme weather events such as heat waves.” R.I. Climate Change Comm’n, *Adapting to Climate Change in the Ocean State: A Starting Point*, at 4 (2012), http://www.crmc.ri.gov/climatechange/RICCC_2012_Progress_Report.pdf.

198. “Coastal and offshore infrastructure may be subject to greater damage from more intense storms and increased decay from increasingly acidic seas.” *RI Ocean SAMP, Vol. 1, Ch. 3: Global Climate Change* at 41.

199. “Increased storm intensity will also increase degradation and vulnerability of associated infrastructure. Movements of sediment due to increased storminess may also decrease safety of structures and increase probability of flooding through erosion of coastal land.” *Id.* at 45.

200. “Storms and associated storm surge cause damage to ports, seawalls and revetments, docks, roads, bridges, wastewater treatment plants and stormwater infrastructure.” *Id.* at 12.

201. “During the Hurricane of 1938, Providence experienced a storm surge of more than 15 feet above mean tide level (MTL), with waves measuring 10 feet above the surge level. The hurricane flood waters inundated the city, damaged buildings and other infrastructure, and demolished the wharves of the inner harbor. Damage amounted to \$16.3 million, equivalent to about \$225 million in 2000 dollars.” *Id.* at 44.

202. The Port of Providence, located within the Metro Bay Region on the Providence River, is directly at risk from these impacts. A URI research team found that “[s]ince 1851, 37 hurricanes have come within 50 miles of Rhode Island”—“approximately a ‘4 year return period.’” *Special House Comm’n to Study Econ. Risk Due to Flooding and Sea Level Rise*, submitted to the R.I. House of Representatives, at 27 (May 12, 2016), <http://www.rilin.state.ri.us/commissions/fsrcomm/commdocs/20160512%20Economic%20Risk%20Due%20to%20Flooding%20and%20Sea%20Level%20Rise%20-%20final.pdf>. When accounting for climate change impacts, such as increased frequency and intensity of storms and sea level rise, a “1 in 100 year storm scenario could become the 1 in 3 year storm scenario.” *Id.*

203. CRMC developed StormTools, a series of maps for the Rhode Island Shoreline Change Special Area Management Plan. In developing those maps, researchers examined climate change risks such as sea level rise, floodplain mapping, extra/tropical storms, and nuisance storms. Applying data, including, but not limited to, data from the U.S. Army Corps of Engineers’ *North*

Atlantic Coast Comprehensive Study of storm surge and wave height at the 95% confidence interval and the NOAA high curve sea level rise projections (*Sea-Level Change Curve Calculator*), CRMC predicted coastal inundation due to storm surge and tides “today.”

204. As indicated in the StormTools modeling, the majority of the Providence Terminal is presently at risk from a 4%, 2%, 1%, and 0.2% annual chance storm at respectively increasing flood depths. See CRMC, URI CRC, *TODAY: Extra/Tropical Storms*, Advanced STORMTOOLS, <http://arcg.is/1Wv9uT> (select “Content” on the top left to reveal selections for 25, 50, 100, and 500 year coastal storms; selecting those storms reveal maps showing flooding) (last visited Oct. 25, 2017).

205. According to StormTools, for 25 year coastal storms—which have a 4% chance of occurring in a given year—researchers predicted flood depths as great as 11 feet, with impacts extending to the West Side Tank Farm of the Providence Terminal.

206. According to StormTools, for 50 year coastal storms—which have a 2% chance of occurring in a given year—researchers predicted flood depths as great as 12 feet, with impacts extending to the West Side Tank Farm of the Providence Terminal.

207. According to StormTools, for 100 year coastal storms—which have a 1% chance of occurring in a given year—researchers predicted flood depths as great as 15 feet, with impacts extending to the West Side Tank Farm of the Providence Terminal.

208. According to StormTools, for 500 year coastal storms—which have a 0.2% chance of occurring in a given year—researchers predicted flood depths as great as 19 feet, with impacts extending to the West Side Tank Farm of the Providence Terminal.

209. NOAA developed the SLOSH model (Sea, Lake, and Overland Surges from Hurricanes), which produces hurricane surge values for worst case hurricane surge inundation areas.

210. The Army Corps of Engineers' New England District utilized the data to examine areas of inundation for Category 1, 2, 3, and 4 hurricanes, producing a GIS overview layer on the map.

211. The SLOSH model depicts the present-day risk to the Providence Terminal of inundation from storm surge associated with a Category 1 through Category 4 hurricane.

212. As indicated in the SLOSH model, the majority of the Providence Terminal East Side Tank Farm is included within a "Category 1" and "Category 2" Hurricane Surge Inundation Zone, nearly the entire Providence Terminal is included within the "Category 3" Hurricane Surge Inundation Zone, and the entire Providence Terminal is included within the "Category 4" Hurricane Surge Inundation Zone:



Hurricane Surge
Inundation Areas (Worst
Case) for Providence
County



See URIEDC, RIGIS, *Hurricane Surge Inundation Areas (Worst Case)*, <http://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=43169083ba5f4566ae38be9223450a3d> (last visited Oct. 25, 2017).

213. The 1998 Shell Sustainability Report says of the greenhouse effect: “there is concern that it will cause the world to warm up, which could lead to a change in climate and local weather patterns, possibly with increased droughts, floods, storms and sea level rise.” *Profits and Principles – does there have to be a choice? The Shell Rep. 1998* at 40.

214. In August 2005, Shell’s Mars Platform in the Gulf of Mexico suffered damages during Hurricane Katrina, not coming back online until May 2006. The storm forced Shell to begin “preparing for hurricanes in the Gulf of Mexico.” Shell, *The Shell Sustainability Rep. 2006: Meeting the Energy Challenge*, at 23 (2006), <https://www.unglobalcompact.org/system/attachments/1914/original/COP.pdf?1262614296>. In its 2006 Sustainability Report, Shell stated:

[w]e have used the knowledge gained from the Mars recovery to further improve the ability of our offshore equipment to withstand hurricanes and to reduce disruptions when equipment is damaged . . . In anticipation of future storms, we are improving our communications systems, increasing the number of helicopters and ships and spare parts we have on call, and working with others to find alternative ways to get oil to refineries safely when part of the pipeline network is damaged.

Id.

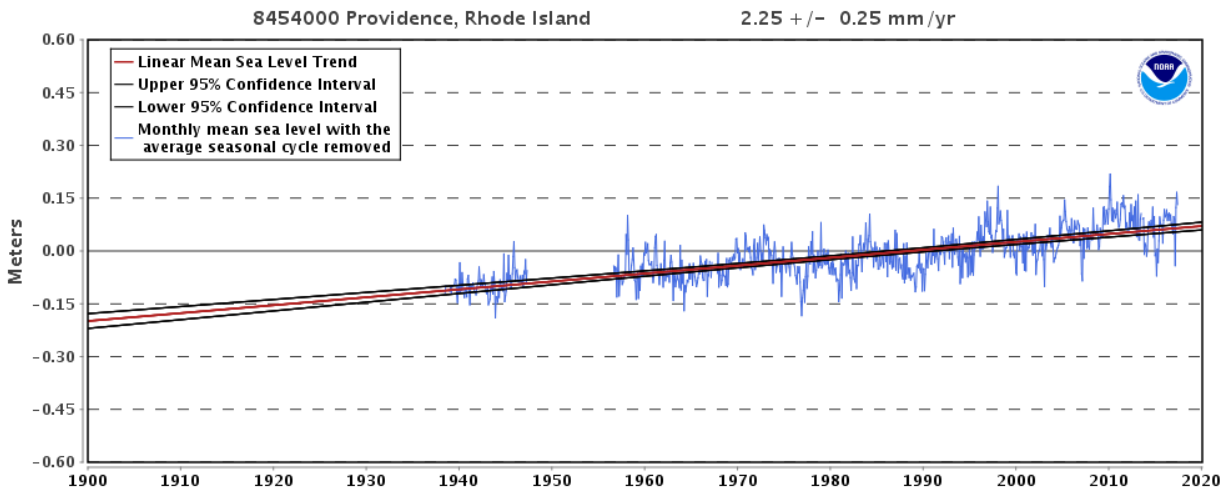
215. However, Shell has not taken action to address these threats at the Providence Terminal.

b. *Sea Level Rise Contributes to Flooding*

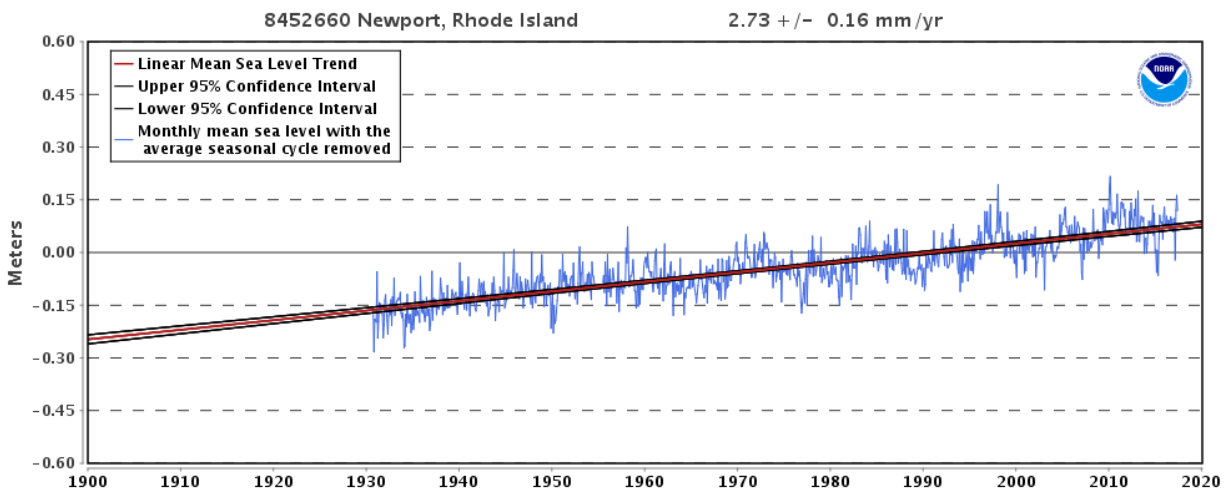
216. Sea level rise that has already happened, and that will certainly happen in the near future, interacts with the impacts of tides, heavy precipitation, and storm surge, to cause and contribute

to pollutant discharges and/or releases from the Providence Terminal due to, including, but not limited to, inadequate infrastructure design and infrastructure failure.

217. The mean sea level trends measured at the Providence and Newport Tide Gauge confirm past, present, and ongoing sea level rise in Rhode Island:



NOAA, *Mean Sea Level Trend Measured at the Providence Tide Gauge, 8454000*, TIDES & CURRENTS, https://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=8454000 (last visited Oct. 25, 2017).



NOAA, *Mean Sea Level Trend Measured at the Newport Tide Gauge*, 8452660, TIDES & CURRENTS, https://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=8452660 (last visited Oct. 25, 2017).

218. “Coastal flooding [in the Northeast] has increased due to a rise in sea level of approximately 1 foot since 1900. This rate of sea level rise exceeds the global average of approximately 8 inches” *Third Nat’l Climate Assessment*, Ch. 16: Northeast at 373.

219. Sea level trends along the Northeast Atlantic “have been higher than the global rate over the last several decades, capped by a recent multiyear jump in sea level beginning in 2009.” NOAA, *Global & Regional Sea Level Rise Scenarios for the U.S.*, at 9 (Jan. 2017), https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf. This trend is projected to continue. *See id.* at vii (“Along regions of the Northeast Atlantic (Virginia coast and northward) and the western Gulf of Mexico coasts, RSL [relative sea level] rise is projected to be greater than the global average for almost all future GMSL [global mean sea level] rise scenarios.”).

220. Researchers have detected a “‘hotspot’ of accelerated sea level rise along the 1,000 km of coast from Cape Hatteras to above Boston and suggest it may be related to circulation changes in the North Atlantic Ocean.” NOAA, *Global Sea Level Rise Scenarios for the U.S. Nat’l Climate Assessment*, at 10 (Dec. 2012), https://cpo.noaa.gov/sites/cpo/Reports/2012/NOAA_SLR_r3.pdf. “Dynamical [sea level rise] resulting from ocean circulation patterns could be additive to the global mean [sea level rise] trend, creating even higher sea levels and potential coastal impacts in Boston, New York, and Washington, DC when compared to the Southeastern US.” *Id.* at 18-19.

221. “Sea level rise of two feet, without any changes in storms, would more than triple the frequency of dangerous coastal flooding throughout most of the Northeast.” *Third Nat’l Climate Assessment*, Ch. 16: Northeast at 374.

222. “Sea levels have risen over 9 inches in Rhode Island since 1930 as measured at the Newport tide gauge The historic rate of sea level rise (SLR) at the Newport tide gauge from 1930 to 2015 is presently 2.72 mm/year or more than an inch per decade.” *2016 EC⁴ Ann. Rep.* at 28. “SLR at the Newport tide gauge from 1984-2011 was 4.1 mm/year. This rate is similar to the mean annual rate of SLR for Newport of 4.8 mm/year for the period of 1999 to present as determined from the Permanent Service for Mean Sea Level at Newport.” *Id.*

223. “Sea level rise of the magnitude predicted could also potentially compromise onsite wastewater treatment systems, municipal sewage treatment plants, and stormwater infrastructure.” *RI Ocean SAMP, Vol. 1, Ch. 3: Global Climate Change* at 43.

224. “Higher sea levels increase the likelihood of flooding and inundation of coastal lands and infrastructure. Any given storm event will surge higher on land because the relative sea level is higher than in the past and be exacerbated in the future by more intense storms.” *Id.*

225. “This can affect the use of infrastructure in ports and harbors both over the short term (during a flooding event) and long term (extensive damage from inundation) and impact the ability for vessels to access the coast (for example, to unload cargo or pick up passengers).” *Id.*

226. “Higher flood levels and storage-area inundation may also inundate contaminated (or potentially contaminated) lands, and/or infrastructure not designed to withstand flooding. These areas could require new containment methods to prevent leaching.” *Id.*

227. “Rhode Island has 47.1 square miles (mi²) (122.0 square kilometers (km²)) of land lying within 4.9 vertical feet (1.5 meters) of sea level with an additional 24 mi² (108.8 km²) between

4.9 and 11.5 feet (1.5 and 3.5 meters). This 4.9-foot (1.5-meter) contour roughly represents the area that would be inundated during spring high water with a 2.3-foot (0.7 meter) rise in sea level. This sea level rise scenario is within current end-of-century projections.” *Id.*

228. In January 2017, NOAA increased its worst case sea level rise prediction to a greater-than-eight-foot increase in sea level rise in Rhode Island by 2100. *See CRMC, New NOAA Sea Level Rise Projections Dramatically Increase by 2100* (Feb. 22, 2017), www.crmc.ri.gov/news/2017_0222_sealevel.html.

229. In reference to the report, Grover Fugate, Executive Director of CRMC stated: “[t]o put in perspective we’ve had 10 inches (of sea-level rise) during the last 90 years. We’re about to have 10 feet in the next 80 years.” Tim Faulkner, *Ocean State Sea level-Rise Estimate Now Above 9 Feet*, ECORI (Feb. 12, 2017), <https://www.ecori.org/climate-change/2017/2/12/sea-level-rise-estimate-now-above-9-feet>.

230. “[Sea level rise] has critical implications for RI, as approximately 6, 13 and 20 square miles of Rhode Island’s coastal areas will be permanently flooded with 1, 3 and 5 feet of SLR, respectively” *2016 EC⁴ Ann. Rep.* at 29.

231. Certain future changes are “committed” by “virtue of past or current forcings.” IPCC, *Climate Change 2013: The Physical Science Basis, Contribution of Working Grp. I to the Fifth Assessment Rep. of the IPCC*, at 128 (2013), http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf. Continued sea level rise is “committed” as a result of past change in atmospheric composition, due to historical greenhouse gas and aerosol emissions, as well as the inertia and timescales of climate systems. IPCC, *Climate Change 2007: The Physical Science Basis, Working Grp. I Contribution to the*

Fourth Assessment Rep. of the IPCC, at 68, 77 (2007), http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4_wg1_full_report.pdf.

232. “[I]t is *virtually certain* that global mean sea level rise will continue beyond 2100, with sea level rise due to thermal expansion to continue for many centuries.” IPCC, *Climate Change 2013: The Physical Science Basis, Contribution of Working Grp. I to the Fifth Assessment Rep. of the IPCC*, at 28, 105, 1140 (2013),

http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf. The IPCC defines “virtually certain” as a “99-100% probability.” *Id.* at 4.

233. Researchers have found that the amount of greenhouse gases emitted by the year 2000 have already committed global mean sea level rise to approximately 1.7 meters (range of 1.2 to 2.2 meters). See Peter Clark, *Consequences of Twenty-First-Century Policy for Multi-Millennial Climate and Sea-Level Change*, NATURE CLIMATE CHANGE, at 365 (Feb. 8, 2016), <http://climatehomes.unibe.ch/~stocker/papers/clark16natcc.pdf>. Sea level rise varies regionally, but the majority of coastlines will experience sea level rise within a range of 20% of the global mean sea level rise. See *id.*

234. Other researchers have found that cumulative emissions through the year 2015 have already committed global sea level rise to 1.6 meters (range of 0 to 3.7 meters) and that cumulative emissions through 2050, under the IPCC Fifth Assessment intermediate emissions pathway, commit Boston to sea level rise of 2.8 meters. See Benjamin Strauss et al., *Carbon choices determine US cities committed to future below sea level*, PNAS, 13511, Table S3 (click “Tables S3–S6”) (Sept. 18, 2015), <http://www.pnas.org/content/112/44/13508.full.pdf>.

235. In 1972, the American Petroleum Institute (“API”) released a status report on all group-sponsored environmental research projects. Shell is among the thirty-nine “company affiliations

of committee members” listed in the status report. API, *Environmental Research, A Status Report*, at IV-1 (Jan. 1972), <http://files.eric.ed.gov/fulltext/ED066339.pdf>. The report contains a summary of a 1968 report on *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants* prepared for API. *Id.* at III-9. The API status report refers to the research initiative’s discussion of CO₂ as a “brief review of current thinking.” *Id.*

236. The *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants* report, by Stanford Research Institute (“SRI”), discusses the implications of a CO₂ generated “greenhouse effect” and consequential temperature increase, asserting that “[i]f the earth’s temperature increases significantly, a number of events might be expected to occur, including the melting of the Antarctic ice cap, a rise in sea levels, warming of the oceans, and an increase in photosynthesis.” Robinson et al., *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants*, SRI, at 108 (1968), excerpt at <https://www.smokeandfumes.org/documents/document16>. In the report, SRI further states that “[a]lthough there are other possible sources for the additional CO₂ now being observed in the atmosphere, none seems to fit the presently observed situation as well as the fossil fuel emanation theory.” *Id.* at 109.

237. A 1989 New York Times article describes Shell’s efforts to design and construct a natural-gas production platform in the North Sea that would account for sea level rise. According to the article, in anticipation of sea level rise throughout the duration of the platform’s lifespan, the company’s engineers “are considering raising the platform from the standard 30 meters – the height now thought necessary to stay above the waves that come in a once-a-century storm – to 31 or 32 meters.” *Greenhouse Effect: Shell Anticipates a Sea Change*, THE NEW YORK TIMES (Dec. 20, 1989), <http://www.nytimes.com/1989/12/20/business/greenhouse-effect-shell->

anticipates-a-sea-change.html. The additional cost of a one-meter increase was sixteen million dollars (1989 USD Value). *See id.*

238. In the early 1990s, Shell joined Mobil, Imperial Oil, and Nova Scotia Resources Limited in the Sable Offshore Energy Project to examine oil exploration off the coast of Nova Scotia. The project produced a Development Plan containing an Environmental Impact Statement, which addressed “Global Warming Sea-Level Rise.” The Statement reads:

Numerous predictions of sea-level rise due to global warming have been made during the past decade. The prediction of IPCC working group was that the mean sea-level rise would increase by 16-32 cm (with mean increase of 20 cm) by the year 2030; and by 33-75 cm (mean increase of 45 cm) by the year 2070. There are doubts that these predictions would apply across the globe.

The impact of a global warming sea-level rise may be particularly significant in Nova Scotia. The long-term tide gauge records at a number of locations along the N.S. coast have shown sea level has been rising over the past century. The water level data from the Halifax Harbour tide gauge (since 1851) have shown a rate of sea-level rise of about 3.18 mm/yr, based on records from 1896 to 1990, and of 3.63 mm/yr based on data from 1920 to 1990.

The estimated increase in water level due to global warming could vary from 0.20 to 1.4 m by the middle of the next century. *For the design of coastal and offshore structures, an estimated rise in water level, due to global warming, of 0.5 m to [sic] may be assumed for the proposed project life (25 years).* However, there was no strong scientific support for such an estimate given in the literature.

ExxonMobil, *Development Plan: Sable Offshore Energy Project*, Vol. 3, Ch. 4 (Environmental Setting), at 4-76 – 4-77 (citations omitted) (emphasis added),

<http://soep.com/about-the-project/development-plan-application/> (last visited Oct. 24, 2017).

239. However, Shell has not taken action to address the threat of sea level rise at the Providence Terminal.

c. *Increasing Sea Surface Temperatures Contribute to Flooding*

240. Increases in sea surface temperature and the resulting increase in frequency and magnitude of storm events causes and contributes to pollutant discharges and/or releases from the Providence Terminal due to, including but not limited to, inadequate infrastructure design and infrastructure failure.

241. Regarding “Climate-related Drivers of Coastal Change,” “[t]he primary climatic forces affecting the coasts are changes in temperature, sea and water levels, precipitation, storminess, ocean acidity, and ocean circulation.” *Third Nat’l Climate Assessment* at 582. “Sea surface temperatures are rising and are expected to rise faster over the next few decades, with significant regional variation, and with the possibility for more intense hurricanes as oceans warm.” *Id.*

242. The rate of increase in the northeast is greater than the global average: “[f]rom 1982 to 2006, sea surface temperature in the coastal waters of the Northeast warmed by close to twice the global rate of warming over this period.” *Id.* at 566.

243. Increases in sea surface temperature have been connected to increased risk of frequency and magnitude of storm events. The observed increases in activity in North Atlantic hurricanes “are linked, in part, to higher sea surface temperatures in the region that Atlantic hurricanes form in and move through.” *Id.* at 41.

244. “The water in Narragansett Bay is getting warmer. Over the past 50 years, the surface temperature of the Bay has increased 1.4° to 1.6° C (2.5° to 2.9° F). Winter water temperatures in the Bay have increased even more, from 1.6° to 2.0° C (2.9° to 3.6° F).” *2016 EC⁴ Annual Rep.* at 33.

245. “Ocean temperatures are increasing world-wide, but temperature increases in the northwestern Atlantic Ocean are expected to be 2-3 times larger than the global average.” *Id.*

246. Shell has not taken action to address the threats associated with increasing sea surface temperatures at the Providence Terminal.

B. Lessons from the (Not-So-Distant) Past

247. The unfortunate reality is that the present and substantial continued risk of pollutant releases and/or discharges from the Providence Terminal is made worse by the factors described in Section IV.A, *supra*.

248. This reality has been demonstrated in the context of increased severe weather events, including Superstorm Sandy. In late October 2012, Motiva Enterprises LLC's (at the time, a joint venture between Royal Dutch Shell plc and Saudi Aramco) Sewaren Terminal in New Jersey suffered a 378,000 gallon oil release into the Arthur Kill as a result of a containment failure. As reported in the New Jersey news media outlet NJ.com:

[A]t the Sewaren terminal of Motiva Enterprises, a subsidiary of Shell, the tidal surge damaged bulk fuel tanks, releasing approximately 378,000 gallons of low-sulfur diesel, officials said. Nearly three quarters of that amount escaped the containment area, rushing into the Arthur Kill and its tributaries. That's like 30 tanker trucks pouring their contents into the water.

It represents the largest fuel or oil spill in New Jersey in perhaps a decade or more, officials said.

'That's a major spill,' said Larry Ragonese, a spokesman for the state Department of Environmental Protection. 'On a normal basis, we would have had quite a bit of uproar and media attention.'

That, of course, did not happen as the region reeled amid death, destruction and darkness. Quickly and quietly, though, Shell and the other two oil companies that experienced leaks — at the Phillips 66 refinery in Linden and at the Kinder Morgan terminal in Carteret — moved in to plug breached tanks and contain what had already been released.

Within 24 hours, hundreds of workers had responded with oil skimmers, vacuum trucks, water barges, work boats and thousands of feet of containment boom, according to local, state and federal officials who have provided oversight for the work.

Ryan Hutchins, *Oil Spills, Other Hurricane Sandy Damage Present N.J. with Potential Pollution Headaches*, NJ.COM (Nov. 14, 2012),

http://www.nj.com/news/index.ssf/2012/11/hurricane_sandy_oil_spills.html.

249. Harvard's Daniel P. Schrag, Sturgis Hooper Professor of Geology in the Faculty of Arts and Sciences, stated in a news report regarding Superstorm Sandy that:

By midcentury, this will be the new normal How do you deal with extreme heat in the summer? It's going to be a challenge, but humans are adaptable. It's not going to be easy, just like a 13-foot storm surge will be the new norm on the Eastern seaboard.

Edward Mason, *Hello Again, Climate Change: Sandy Prompts Renewed Interest and Concern, and Schrag Says it Should*, HARVARD GAZETTE (Nov. 6, 2012),

<http://news.harvard.edu/gazette/story/2012/11/hello-again-climate-change/>.

250. Considering the future implications of storms such as Superstorm Sandy, URI Professor Austin Becker commented: "[p]orts provide a public good and we all benefit from that . . . and so a storm hitting the Port of Providence can have huge ramifications for the whole state."

Preparing Ports to Ride Out the Storm, RHODE ISLAND SEA GRANT (Mar. 19, 2015),

<http://seagrant.gso.uri.edu/preparing-ports-to-ride-out-the-storm/>.

251. More recently, Hurricane Harvey's intense rains and flooding struck the Texas energy sector, damaging facilities and causing releases and discharges of pollutants, including toxic chemicals. Preliminary data from the National Weather Service shows that between August 24 and September 1, 2017, as much as 64.58 inches of rain fell in parts of Texas, including areas in and around Houston and Beaumont.

252. According to pollution reports submitted to state and federal regulators, “more than two dozen storage tanks holding crude oil, gasoline and other contaminants ruptured or otherwise failed when Harvey slammed into the Texas coast, spilling at least 145,000 gallons [] of fuel and spewing toxic pollutants into the air.” Matthew Brown & Larry Fenn, *Tank Failures in Harvey Reveal Vulnerabilities in Storm*, ASSOCIATED PRESS (Sept. 9, 2017), <https://apnews.com/0485b3c424be4ce3bb555cf16a88f3bd>.

253. On August 28, 2017, Shell reported to the Texas Commission on Environmental Quality (“CEQ”) that at its Deer Park facility, “at approximately 8:00 am, it was discovered that the external floating roof Tank G346 had material on top of the roof and in the dike area. Process indicators determined that the roof started sinking at 3:00 AM due to Hurricane Harvey dumping heavy and large amounts of rainfall in a short period of time.” Included among emissions reported during the event were approximately 2968.8 pounds of benzene, 1272.4 pounds of ethylbenzene, 11451.1 pounds of toluene, and 7634.1 pounds of xylene. *See Texas CEQ, Air Emission Event Reporting Database: Shell Oil Deer Park*, (Aug. 28, 2017), <http://www2.tceq.texas.gov/occeer/index.cfm?fuseaction=main.getDetails&target=266341>.

254. On August 28, 2017, Shell reported from its Deer Park facility that “[c]rude oil was discovered on the roof of tank A330. Heavy rains from Hurricane Harvey resulted in significant roof stress, which then allowed crude to get onto the roof.” Included among emissions reported during the event were approximately 19 pounds of benzene and 122.2 pounds of toluene. *See Texas CEQ, Air Emission Event Reporting Database: Shell Oil Deer Park* (Aug. 28, 2017), <http://www2.tceq.texas.gov/occeer/index.cfm?fuseaction=main.getDetails&target=267012>.

255. From August 27 to September 1, 2017, Shell filed five reports with the National Response Center documenting incidents at its Deer Park and Houston facilities.

256. Incidents reported include: “Heavy rains and flood waters resulted in a discharge of residual crude oil to the Houston ship channel;” “A release of [1001 Pound(s)] of Phenol (CAS 108952) from the piping of a process unit;” “A release of materials due to rising waters from the tropical storm;” and “Hydrocarbons, Benzene and Toluene released from a storage tank into the fire wall and ground” U.S. Coast Guard Nat’l Response Ctr., 2017 Reps., <http://www.nrc.uscg.mil/>.

257. At Kinder Morgan’s Pasadena Terminal, “a [] 6.3 million gallon [] fuel storage tank spilled an unspecified amount of gasoline . . . after tilting over due to large volumes of rain from Harvey.” *Texas Regulators Report Gas Spill Due to Harvey*, ASSOCIATED PRESS (Aug. 28, 2017), <https://www.houstonpublicmedia.org/articles/news/2017/08/28/233577/texas-regulators-report-gas-spill-due-to-harvey/>.

258. Another spill occurred at a ConocoPhillips facility when rising waters associated with heavy rains and flooding washed out four storage tanks holding approximately 16,160 gallons of oil and approximately 3,192 gallons of produced water. ConocoPhillips, *ConocoPhillips Responds to Harvey* (Aug. 2017), <http://www.conocophillips.com/Pages/Hurricane-Relief-Efforts.aspx>.

259. At an Arkema Inc. facility in Crosby, Texas, flooding overwhelmed primary power and two sources of emergency backup power causing explosions and black smoke that forced evacuations of areas within 1.5 miles of the plant. Arkema, *Explosions & Smoke Reported at Arkema Inc. Crosby Plant* (Aug. 31, 2017), <http://www.arkema-america.com/en/media/news-overview/news/Explosions-and-Smoke-Reported-at-Arkema-Inc.-Crosby-Plant/>.

260. According to the Texas CEQ's assessment of Superfund sites, as of September 2, 2017, "13 sites have been flooded and/or are experiencing possible damage due to the storm." Texas CEQ, *Status of Superfund sites in areas affected by Harvey* (Sep. 2, 2017), <https://www.tceq.texas.gov/news/releases/status-of-superfund-sites-affected-by-harvey>.

261. Climate change increases the likelihood that extreme rainfall will accompany storms like Harvey because a warmer atmosphere holds more water and warmer oceans help pack these storms with even more moisture. Climate change is also increasing the severity of storm-related damages, largely because of rising sea levels.

V. Shell has Failed to Utilize Good Engineering Practices

262. Engineers take the factors discussed in Section IV.A, *supra*, into account throughout their facility planning, decision-making, construction and design, engineering certification, and operation processes in order to assure adequate control and treatment of pollutant discharges and/or releases.

263. Engineers exercising skill and judgment reasonably expected of similarly situated professionals make engineering decisions based on information regarding the factors discussed in Section IV.A, *supra*.

264. For example, the Army Corps of Engineers issued a regulation in 2013 entitled "Incorporating Sea Level Change in Civil Works Programs." That regulation states that

[sea level change] can cause a number of impacts in coastal and estuarine zones, including changes in shoreline erosion, inundation or exposure of low-lying coastal areas, changes in storm and flood damages, shifts in extent and distribution of wetlands and other coastal habitats, changes to groundwater levels, and alterations to salinity intrusion into estuaries and groundwater systems.

Army Corps of Engineers, Regulation No. 1100-2-8162, at Appendix B, B-1 (Dec. 31, 2013), http://www.publications.usace.army.mil/Portals/76/Publications/EngineerRegulations/ER_1100-2-8162.pdf.

265. The Army Corps of Engineers acknowledges that sea level change is likely to impact coastal projects, and “[a]s a result, managing, planning, engineering, designing, operating, and maintaining for [sea level change] must consider how sensitive and adaptable 1) natural and managed ecosystems and 2) human and engineered systems are to climate change and other related global changes.” *Id.* at 2.

266. The Army Corps of Engineers’ regulation also states that “[h]istoric trends in local MSL [mean sea level] are best determined from tide gauge records. The NOAA Center for Operational Oceanographic Products and Services (CO-OPS) provides historic information and local MSL trends for tidal stations operated by NOAA/NOS in the US.” *Id.* at Appendix B, B-2.

267. The historic rate of relative sea level change at relevant local tide stations (as shown in the graphs above for the Providence and Newport Tide Gauges, *see supra* ¶ 217) should be used as the low rate for analysis, because it is a linear extrapolation from historic tide gauge measurements and does not account for future acceleration of sea level rise, ice sheet melt, or sea level rise due to warmer water occupying a greater volume.

268. CRMC has developed a “Climate and Sea Level Rise Policy” providing the following:

- a. “The Council will prohibit those land-based and offshore development projects that based on a sea level rise scenario analysis will threaten public safety or not perform as designed resulting in significant environmental impacts.” *RI Ocean SAMP, Vol. 1, Ch. 3: Global Climate Change* at 56.

- b. “The U.S. Army Corps of Engineers (ACOE) . . . design and construction standards that consider impacts from sea level rise . . . should be applied to determine sea level rise impacts.” *Id.*
- c. “The Council supports the application of enhanced building standards in the design phase of rebuilding coastal infrastructure associated with the Ocean SAMP area, including port facilities, docks, and bridges that ships must pass under.” *Id.*
- d. “The Council will reassess coastal infrastructure and seaworthy marine structure building standards periodically not only for sea level rise, but also for other climate changes including more intense storms, increased wave action, and increased acidity in the sea.” *Id.*

269. Included among Shell’s list of environmental standards is “preventing spills and leaks of hazardous materials.” Shell Global, *Our Approach*, <http://www.shell.com/sustainability/environment/our-approach-sustainability.html> (last visited Oct. 25, 2017). Shell states that “[t]o avoid spills and leaks of hazardous substances, we work hard to make sure our facilities are well designed, safely operated and appropriately inspected and maintained.” *Id.*

270. In discussing “Adaptation” to climate change in its 2016 Sustainability Report, Shell stated:

[t]he effects of climate change mean that governments, businesses and local communities are adapting their infrastructure to the changing environment. At Shell, we are taking steps at our facilities around the world to ensure that they are resilient to climate change. This reduces the vulnerability of our facilities and infrastructure to potential extreme variability in weather conditions.

We take different approaches to adaptation for existing facilities and new projects. We progressively adjust our design standards for

new projects while, for existing assets, we identify those that are most vulnerable to climate change and take appropriate action.

Royal Dutch Shell plc, *Sustainability Rep.*, at 19 (2016),

https://www.unglobalcompact.org/system/attachments/cop_2017/375091/original/entire_shell_sr16.pdf?1491999994. The report further states that “Shell has a rigorous approach to understanding, managing and mitigating climate risks in our facilities.” *Id.*

271. Contrary to these statements, Shell is not “understanding, managing and mitigating climate risks” at the Providence Terminal.

272. Unlike others involved in large-scale engineering projects, Shell has not taken information known to it regarding the factors discussed in Section IV.A, *supra*, into account in designing, constructing, and operating the Providence Terminal to protect the Providence Terminal and surrounding communities from pollutant discharges and/or releases.

273. Shell’s disregard of the substantial and imminent risks to the Providence Terminal and its continuing failure to protect the Providence Terminal against such risks make Shell liable for violations of the CWA and RCRA, as described below.

CLAIMS FOR RELIEF

First Cause of Action

Violation of the Clean Water Act – Unlawful Certification of SWPPP

274. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

275. The Permit requires that “[t]he SWPPP shall be signed by the permittee in accordance with RIPDES Rule 12” 2011 Permit Part I.C.2, Ex. A at 12; 2019 Permit Part I.C.2, Ex. L at 16.

276. RIPDES Rule 12 requires that for corporations, “[a]ll permit applications shall be signed . . . by a responsible corporate officer.” R.I. Code R. 25-16-14:12(a). Further:

For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (ii) The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

Id.

277. Similarly, the federal regulations for NPDES permits found at 40 C.F.R. § 122.22 require that a permit application submitted by a corporation be signed by a responsible corporate officer.

See 40 C.F.R. § 122.22(a)(1). Further:

[f]or the purposes of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure *long term environmental compliance* with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

Id. (emphasis added). 40 C.F.R. § 122.22(a)(1) also notes that:

EPA does not require specific assignments or delegations of authority to responsible corporate officers identified in § 122.22(a)(1)(i). The Agency will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the Director to the

contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under § 122.22(a)(1)(ii) rather than to specific individuals.

278. Both R.I. Code R. 25-16-14:12(d) and the federal regulations at 40 C.F.R. § 122.22(d) require Shell to make the following certification when signing such documents:

I certify under penalty of law that this document and all attachments were prepared under the direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

279. Shell made the required certification at the time of submittal of its RIPDES permit applications.

280. Shell made the required certification at the time of development and submission of its SWPPP.

281. Shell made these certifications without disclosing information in its possession that was relied on by the company in its business decision-making regarding the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges associated with these factors.

282. Shell made these certifications without developing and implementing a SWPPP based on information in its possession that was relied on by the company in its business decision-making regarding the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges associated with these factors.

283. Shell made these certifications without addressing spill prevention and control procedures based on information in its possession that was relied on by the company in its business decision-making, regarding the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges and/or releases associated with these factors.

284. Shell's failure to disclose and consider the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges associated with these factors, renders its SWPPP certification untrue, inaccurate, and incomplete, and therefore unlawful under RIPDES Rule 12 and 40 C.F.R. § 122.22.

285. By failing to prepare the SWPPP in accordance with the requirements identified in RIPDES Rule 12 and 40 C.F.R. § 122.22 to which Shell certified that it had complied, Shell is violating the Permit and the Clean Water Act.

286. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Second Cause of Action

Violation of the Clean Water Act – Failure to Prepare SWPPP in Accordance with Good Engineering Practices

287. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

288. The Permit requires that “[t]he SWPPP shall be prepared in accordance with good engineering practices” 2011 Permit Part I.C.1, Ex. A at 12; 2019 Permit Part I.C.1, Ex. L at 16.

289. Shell's SWPPP for the Providence Terminal was not prepared in accordance with good engineering practices because the SWPPP was not based on information consistent with the duty of care applicable to engineers.

290. The SWPPP was not prepared based on information known to reasonably prudent engineers, such as information about the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges associated with these factors.

291. The SWPPP was not prepared based on information known to Shell, such as information about the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges associated with these factors.

292. By failing to prepare a SWPPP in accordance with good engineering practices, Shell is violating the Permit and the Clean Water Act.

293. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Third Cause of Action

Violation of the Clean Water Act – Failure to Identify Sources of Pollution

294. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

295. The Permit requires that “[t]he SWPPP shall . . . identify potential sources of pollutants, which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility.” 2011 Permit Part I.C.1, Ex. A at 12; 2019 Permit Part I.C.1, Ex. L at 16.

296. Shell has failed to identify sources of pollutants resulting from the factors discussed in Section IV.A, *supra*, as sources of pollution reasonably expected and anticipated by Shell to affect the quality of the stormwater discharges from the Providence Terminal.

297. The Permit further requires that:

[t]he SWPPP must provide a description of potential sources which may be reasonably expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. It must identify all activities and significant materials, which may potentially be significant pollutant sources.

2011 Permit Part I.C.5.a, Ex. A at 12; 2019 Permit Part I.C.5.a, Ex. L at 16.

298. The SWPPP does not address sources of pollutants resulting from the factors discussed in Section IV.A, *supra*, as potential sources which may be reasonably expected to add significant amounts of pollutants to stormwater discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility.

299. The SWPPP fails to identify all activities and significant materials, which may potentially be significant pollutant sources due to the factors discussed in Section IV.A, *supra*, and are known to Shell.

300. By failing to develop a SWPPP that complies with the requirements of the Permit, Shell is violating the Permit and the Clean Water Act.

301. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Fourth Cause of Action

Violation of the Clean Water Act – Failure to Describe and Implement Practices to Reduce Pollutants and Ensure Permit Compliance

302. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

303. The Permit requires that

the SWPPP shall describe and ensure implementation of Best Management Practices (BMPs) which are to be used to reduce or eliminate the pollutants in storm water discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit.

2011 Permit Part I.C.1, Ex. A at 12; 2019 Permit Part I.C.1, Ex. L at 16.

304. Because the SWPPP for the Providence Terminal fails to describe or ensure implementation of BMPs that will be used to address pollutant discharges resulting from the factors discussed in Section IV.A, *supra*, Shell is violating the Permit and the Clean Water Act.

305. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Fifth Cause of Action

Violation of the Clean Water Act – Failure to Address Adequacy of Containment of Leaks and Spills in Storage and Truck Loading Areas

306. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

307. The Permit requires that

[t]he SWPPP in Part I.C. shall specifically address the adequacy of containment of leaks and spills in storage areas (from Drums, Additive Tanks, Petroleum Product Tanks, etc.) and truck loading

area(s). Adequate containment must exist at these locations so as to prevent untreated discharges from reaching any surface water.

2011 Permit Part I.B.5, Ex. A at 11; 2019 Permit Part I.B.5, Ex. L at 15.

308. The SWPPP contains a section entitled “Spill Prevention and Response Procedures.” SWPPP § 4.4 at 18.

309. However, Shell has failed to design and implement containment systems adequate to prevent discharges resulting from the factors discussed in Section IV.A, *supra*.

310. By failing to design and implement adequate containment systems, Shell is violating the Permit and the Clean Water Act.

311. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Sixth Cause of Action

Violation of the Clean Water Act – Failure to Amend or Update the SWPPP

312. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

313. The Permit requires that

[t]he permittee shall immediately amend the SWPPP whenever there is a change in design, construction, operation, or maintenance, which has a significant effect of [sic] the potential for the discharge of pollutants to the waters of the State; a release of reportable quantities of hazardous substances and oil; or if the SWPPP proves to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. Changes must be noted and then submitted to DEM. Amendments to the SWPPP may be reviewed by DEM in the same manner as Part I.C.3. of this permit.

2011 Permit Part I.C.4, Ex. A at 12; 2019 Permit Part I.C.4, Ex. L at 16.

314. Shell has not amended or updated its SWPPP based on information in its possession regarding the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges and/or releases associated with these factors, in violation of the Permit and the Clean Water Act.

315. By failing to properly amend or update its SWPPP, Shell is violating the Permit and the Clean Water Act.

316. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Seventh Cause of Action

Violation of the Clean Water Act – Failure to Properly Operate and Maintain Facilities and Systems of Treatment and Control

317. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

318. The Permit requires that “[t]he permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.” 2011 Permit Part II(e), Ex. A, at 36; 2019 Permit Part II(e), Ex. L at 49. “Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures” *Id.* The Permit provision “requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.” *Id.* See also 40 C.F.R. § 122.41(e).

319. The Permit’s SWPPP requirements also include preventative maintenance protocols involving “inspection and maintenance of storm water management devices (i.e., oil/water

separators, catch basins) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdown or failures resulting in discharges of pollutants to surface waters.” 2011 Permit Part I.C.5.b.3, Ex. A at 14; 2019 Permit Part I.C.5.b.3, Ex. L at 18.

320. Shell is not properly operating and maintaining the Providence Terminal because Shell has failed to consider and act upon information regarding the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges and/or releases associated with these factors.

321. By failing to properly operate and maintain the Providence Terminal, Shell is violating the Permit and the Clean Water Act.

322. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Eighth Cause of Action

Violation of the Clean Water Act – Failure to Clean Oil/Water Separators and Storm Water Ponds

323. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

324. The SWPPP states that “[t]he oil/water separators are is [sic] inspected quarterly for both sludge layer and oil layer and cleaned-out as appropriate” and that “[t]he storm water collection ponds are also inspected quarterly for excessive sediment build-up or evidence of erosion, and corrective action taken as needed.” SWPPP § 4.9, at 19.

325. The separator and ponds are routinely dirty, and show no signs of regular cleaning or maintenance. Examples of this are attached at Exhibits D and E.

326. Failure to clean out the separators and ponds and/or take corrective action is a violation of Shell's duty to maintain and implement the SWPPP. *See* 2011 Permit Part I.C.1, Ex. A at 12; 2019 Permit Part I.C.1, Ex. L at 16; SWPPP i at 3.

327. By failing to comply with its duties under the SWPPP, Shell is violating the Permit and the Clean Water Act.

328. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Ninth Cause of Action

Violation of the Clean Water Act – Failure to Submit Required Facts or Information to Rhode Island Department of Environmental Management

329. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

330. The Permit requires that “[w]here the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, they shall promptly submit such facts or information.” 2011 Permit Part II(1)7, Ex. A, at 39; 2019 Permit Part II(1)7, Ex. L, at 52.

331. Shell has failed to submit relevant facts and/or submitted incorrect information regarding the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges and/or releases associated with these factors, in its permit application and in reports to DEM.

332. Shell has not promptly submitted such facts or information to DEM, despite Shell's knowledge of the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges and/or releases associated with these factors.

333. By failing to submit relevant facts and/or submitting incorrect information, and failing to promptly submit such information upon becoming aware that it had not previously been submitted, Shell is violating the Permit and the Clean Water Act.

334. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Tenth Cause of Action

Violation of the Clean Water Act – Duty to Mitigate

335. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

336. The Permit requires that “[t]he permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.” 2011 Permit Part II(d), Ex. A at 35; 2019 Permit Part II(d), Ex. L at 48; *see also* 40 C.F.R. § 122.41(d).

337. Shell has failed to take all reasonable steps to minimize or prevent any discharge in violation of the Permit which has a reasonable likelihood of adversely affecting human health or the environment due to its failure to consider and act upon information known to Shell regarding the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges associated with these factors.

338. By failing to take all reasonable steps to minimize or prevent any discharge which has a reasonable likelihood of adversely affecting human health or the environment, Shell is violating the Permit and the Clean Water Act.

339. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Eleventh Cause of Action

Violation of the Clean Water Act – Unpermitted Discharge

340. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

341. The Clean Water Act prohibits the discharge of any pollutant into the navigable waters of the United States without a NPDES permit authorizing such discharge. *See* 33 U.S.C. §§ 1311(a), 1342.

342. The Permit authorizes discharge of treated stormwater from three distinct outfalls; however, there is additional runoff occurring from the Providence Terminal that is not authorized by the Permit.

343. During rain events, runoff flows down an embankment located on the Providence Terminal property directly into the Providence River. *See* Ex. D.

344. The Providence Terminal also discharges stormwater containing pollutants directly into the City of Providence storm drainage system from an area west of Allens Avenue.

345. These discharges are not authorized by the Permit, and thus are unpermitted, in violation of the Permit and the Clean Water Act.

346. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Twelfth Cause of Action

Violation of the Clean Water Act – Failure to Comply with Monitoring and Reporting Requirements due to Failure to Use and Comply with Required Detection Limits

347. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

348. Failure to conduct required monitoring and reporting in compliance with an NPDES Permit is a violation of the CWA.

349. Shell has failed to comply with the monitoring and reporting requirements in its Permit.

350. As summarized in Exhibit F, Shell has often reported on its DMRs that the concentration of pollutants in the samples analyzed was “<1” ug/L. Reporting “<1” ug/L indicates that the MDL Shell is using for the pollutants is one ug/L, and the amount of pollutant in the analyzed samples was below the detection limit of one ug/L.

351. The MDL expressly required in the Permit for total xylenes, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene is not “one” ug/L; it is 0.5, 0.013, 0.023, 0.018, 0.017, 0.15, 0.03, and 0.043 ug/L, respectively, all values below one. For these pollutant parameters, reporting “<1” ug/L is a violation of the Permit.

352. By reporting these pollutants as “<1”, where “1” is orders of magnitude greater than the required monitoring level for these pollutants, Shell has not documented the level of toxicity of its discharge in conformance with the Permit’s requirements.

353. Shell’s inadequate monitoring and reporting provide little to no useful information regarding the quality or characteristics of these pollutant discharges from the facility.

354. By failing to conduct required monitoring for pollutant discharges and failing to comply with reporting requirements, Shell is violating the Permit and the Clean Water Act.

355. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Thirteenth Cause of Action

Violation of the Clean Water Act – Failure to Comply with Monitoring and Reporting Requirements due to Failure to Comply with Timing Requirements for Sampling

356. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

357. The Permit requires the following regarding sampling for “oil and grease” and “TSS:”

[t]wo (2) samples shall be taken during wet weather and one (1) during dry weather. Wet weather samples must be collected during the first 30 minutes from discharges resulting from a storm event that is greater than 0.1 inch of rainfall in a 24-hour period and at least 72 hours from the previously measurable (greater than 0.1 inch of rainfall in a 24-hour period) storm event. If this is not feasible, wet weather samples may be taken within the first hour of discharge and noted on the Discharge Monitoring Report.

2011 Permit Part I.A.1 n.1, Ex. A at 4; 2019 Permit Part I.A.1 n.1, Ex. L at 9.

358. As summarized in Exhibit G, the DMRs for the Providence Terminal regularly indicate that samples were not taken in compliance with this Permit requirement.

359. For monitored pollutants other than “oil and grease” and “TSS,” the Permit requires that

[o]ne sample shall be taken during the first 30 minutes of discharge from a storm event that is greater than 0.1 inch of rainfall in a 24-hour period and at least 72 hours from the previously measurable (greater than 0.1 inch of rainfall in a 24-hour period) storm event; if this is not feasible, it may be taken within the first hour of discharge and noted on the Discharge Monitoring Report.

2011 Permit Part I.A.1 n.2, Ex. A at 4; 2019 Permit Part I.A.1 n.2, Ex. L at 9.

360. As summarized in Exhibit H, the DMRs for the Providence Terminal regularly indicate that samples were not taken in compliance with this Permit requirement.

361. By failing to take samples in compliance with the Permit's timing requirements, Shell is violating the Permit and the Clean Water Act.

362. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Fourteenth Cause of Action

Violation of the Clean Water Act – Failure to Comply with Monitoring and Reporting Requirements due to Failure to Provide Required Information

363. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

364. For all pollutant monitoring, Shell is required to document specific storm characteristics on the DMRs. Specifically, the Permit requires that

[i]n addition to the required sampling results submitted in accordance with Parts I.A.1. and I.A.3. of this permit, the permittee must provide the date and duration (hours) of the storm event sampled, the total depth of rainfall (inches), and the total volume of runoff (Ft³). This information must be submitted with the Discharge Monitoring Report forms at the frequency specified in Part I.E.2 of this permit.

2011 Permit Part I.A.4.d, Ex. A at 8; *see also* 2019 Permit Part I.A.3.d, Ex. L at 12.

365. As summarized in Exhibit I, the DMRs for the Providence Terminal indicate that the information required under this Permit provision is not being recorded and/or provided.

366. By failing to provide required information in conjunction with its sampling activities, Shell is violating the Permit and the Clean Water Act.

367. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Fifteenth Cause of Action

Violation of the Clean Water Act – Failure to Comply with Monitoring and Reporting Requirements due to Abuse of Waiver Provision

368. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

369. For all pollutant monitoring, if adverse climatic conditions prevent samples from being collected in a given period, Shell is required to submit an explanation as to why, and may only exercise this waiver once in a two-year period. Specifically, the Permit requires that

[i]f the permittee is unable to collect samples due to adverse climatic conditions which make the collections of samples dangerous or impractical, the permittee must submit, in lieu of sampling data, a description of why samples could not be collected, including available precipitation data for the monitoring period. The permittee can only exercise this waiver once in a two (2) year period for outfalls designated 001A, 002A, and 003A.

2011 Permit Part I.A.4.e, Ex. A at 8; 2019 Permit Part I.A.3.e, Ex. L at 12.

370. As summarized in Exhibit J, the DMRs for the Providence Terminal indicate that Shell is over-utilizing this waiver requirement, in violation of the Permit's prohibition on using the waiver more than once in a two-year period.

371. By abusing the limited waiver provision in conjunction with its sampling activities, Shell is violating the Permit and the Clean Water Act.

372. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Sixteenth Cause of Action

Violation of the Clean Water Act – Failure to Comply with Sampling Requirements

373. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

374. The Permit includes a condition entitled “Recordkeeping and Internal Reporting Procedures” that states:

[i]ncidents such as spills, or other discharges, along with *other information describing the quality and quantity of storm water discharges* must be included in the records. All inspections and maintenance activities must be documented and maintained on site for at least five (5) years.

2011 Permit Part I.C.5.b.11, Ex. A at 16 (emphasis added); 2019 Permit Part I.C.5.b.11, Ex. L at 19-20 (emphasis added).

375. Because all discharges through Outfall 001A and some discharges through Outfall 002A are pump controlled, *see* 2011 Permit Statement of Basis, Ex. A at 23; 2019 Permit Statement of Basis, Ex. L at 28, Shell must take samples at those locations within the first 30 minutes of discharge associated with pumping and keep records of all pump operations to be in compliance with the Permit, *see* 2011 Permit Part I.A.1 n.1-2, Ex. A at 4; 2019 Permit Part I.A.1 n.1-2, Ex. L at 9.

376. The DMRs do not indicate that monitoring is occurring during pumped discharges at all, let alone during the first 30 minutes after the pumps are activated.

377. By failing to sample at all pump-controlled locations within the first 30 minutes of discharge associated with pumping and failing to keep records of all pump operations, Shell is violating the Permit and the Clean Water Act.

378. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Seventeenth Cause of Action

Violation of the Clean Water Act – Unlawful Certification of DMRs

379. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

380. The Permit requires that “[a]ll applications, reports, or information submitted to the Director shall be signed and certified in accordance with Rule 12 of the [RIPDES] Regulations.” 2011 Permit Part II(k), Ex. A at 38; 2019 Permit Part II(k), Ex. L at 51.

381. Each and every time Shell submitted the DMRs discussed in Counts Twelve through Sixteen, *supra*, Shell made the certification required under RIPDES Rule 12 and 40 C.F.R. § 122.22:

I certify under penalty of law that this document and all attachments were prepared under the direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

382. This certification language appears on each DMR form next to the “Name/Title Principal Executive Officer” signature line.

383. As discussed above, Shell submitted its DMRs without: 1) documenting the level of toxicity of its discharge in conformance with the Permit’s requirements, 2) taking samples in compliance with the Permit, 3) recording and/or providing information required under the

Permit, 4) complying with the Permit's prohibition on using the waiver provision more than once in a two-year period, and/or 5) conducting proper sampling and recordkeeping in connection with pump operations.

384. For these reasons, the information submitted by Shell in its DMRs was not "true, accurate, and complete," and the certifications are therefore unlawful. Shell's unlawful certifications are summarized in Exhibit K.

385. By making unlawful certifications under RIPDES Rule 12 and 40 C.F.R. § 122.22, Shell is violating the Permit and the Clean Water Act.

386. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Eighteenth Cause of Action

Violation of the Clean Water Act – Violations of State Water Quality Standards

387. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

388. The Permit states: "[d]ischarges which cause a violation of water quality standards are prohibited." 2011 Permit Part II(o), Ex. A at 40; 2019 Permit Part II(o), Ex. L at 53.

389. The State water quality standards for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene are well below "1" ug/L. *See* R.I. Code R. 25-16-25, Appendix B, Table 1 (DEM Ambient Water Quality Criteria and Guidelines).

390. Upon information and belief, Shell is violating State water quality standards, at a minimum, on the days in which Shell has reported “<1” ug/L for the parameters listed above. *See supra* ¶ 350.

391. Each and every violation of State water quality standards is a violation of the Permit and the Clean Water Act.

392. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Nineteenth Cause of Action

Violation of the Clean Water Act – Violation of Permit Prohibition on Visible Oil Sheen, Foam, or Floating Solids

393. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

394. The Permit states that “the effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time” and “[t]he discharge shall not cause visible discoloration of receiving waters.” 2011 Permit Part I.A.4.c & I.A.4.b, Ex. A at 8; 2019 Permit Part I.A.3.c & I.A.3.b, Ex. L at 12.

395. State water quality standards prohibit any “sludge deposits, solid refuse, floating solids, oil, grease, scum” in Class SB1 {a} waterbodies, including the relevant portion of the Providence River. R.I. Code R. 25-16-25:8, Table 2.8.D.(3).

396. There have been past and ongoing discharges associated with the Providence Terminal that result in a visible oil sheen at the Providence Terminal outfalls and in the Providence River.

397. A 2012 Emergency Response Report, filed with the DEM Division of Compliance and Inspection, stated that “oil has been coming out into the Providence River [near one of the

outfalls].” Jill Eastman, Investigator, State of R.I. and Providence Plantations Dep’t of Env’tl. Mgmt., *Emergency Response Report* (Feb. 23, 2012). *See also supra* ¶ 161.

398. Each and every discharge of oil sheen into the Providence River is a violation of State water quality standards, the Permit, and the Clean Water Act.

399. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Twentieth Cause of Action

Violation of the Clean Water Act – Failure to Properly Operate and Maintain Wastewater Collection and Treatment System

400. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

401. The Permit requires that “[t]he wastewater collection and treatment system shall be operated and maintained in order to provide optimal treatment of the wastewaters prior to discharge to the receiving water.” 2011 Permit Part I.B.4, Ex. A at 11; 2019 Permit Part I.B.4, Ex. L at 15.

402. The current condition of the Providence Terminal wastewater collection and treatment system does not comply with this provision of the Permit.

403. The Providence Terminal outfall pipes, which discharge directly into the Providence River, are in disrepair.

404. By failing to properly operate and maintain the wastewater collection and treatment system, Shell is violating the Permit and the Clean Water Act.

405. These violations are ongoing and continuous, and barring a change at the Providence Terminal and full compliance with the permitting requirements of the Clean Water Act, these violations will continue indefinitely.

Twenty-First Cause of Action

Violation of the Resource Conservation and Recovery Act – Imminent and Substantial Endangerment to Human Health and the Environment

406. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

407. At the Providence Terminal, Shell is regulated under RCRA as a generator of hazardous waste, Handler ID No. RID059741520.

408. As described above, Shell's Providence Terminal generates, stores, handles, and disposes of refined petroleum products containing and/or comprised of hazardous waste constituents, toxic and hazardous chemicals, metals, and compounds, including but not limited to: Benzene, Ethanol, Ethylbenzene, Iron, Methyl Tertiary Butyl Ether (MTBE), NAPL, SGT-HEM (Oil and Grease), Petroleum Hydrocarbons, Pyrene, Total Suspended Solids, Xylenes (m,p,o), and Polycyclic Aromatic Hydrocarbons (PAHs): Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(ghi)perylene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, and Pyrene.

409. The soils and groundwaters at the Providence Terminal are contaminated from Shell's past, present, and ongoing handling, storage, treatment, transportation, or disposal of hazardous and solid waste.

410. A 1999 Site Characterization Report and Remedial Action Plan documents that the Providence Terminal site is contaminated with various pollutants. Handex of New England, Inc.,

Updated Site Characterization Rep. and Remedial Action Plan: Motiva Facility Terminal, 520 Allens Avenue Providence, R.I. (July 1999). The report identified five Areas of Concern (“AOCs”) that are contaminated with levels of Non-aqueous phase liquid, Petroleum Hydrocarbons, and Volatile Petroleum Hydrocarbon Constituents. Two of the AOCs border the Providence River. A 2009 Addendum to the Remedial Action Plan establishing a Long-term Groundwater Monitoring Plan for four of these AOCs reported that “[g]roundwaters within this classification may not be suitable for direct human consumption due to waste discharges, spills or leaks of chemical or land use impacts.” Sovereign Consulting Inc., Remedial Action Plan Addendum and Long-Term Groundwater Monitoring Plan: Motiva Bulk Storage Facility No. 58097, 520 Allens Avenue Providence, R.I., at 1 (Sept. 2009).

411. The hazardous and solid waste at the Providence Terminal is generated, handled, stored, treated, transported and/or disposed of at or near sea level in close proximity to major human population centers, the Providence Harbor, and the Providence River.

412. As described above, Shell has discharged and/or released pollutants from the Providence Terminal, and will likely continue to do so, due to, including, but not limited to, infrastructure failures and inadequate infrastructure design.

413. There is a substantial and imminent risk of the Providence Terminal discharging and/or releasing pollutants because the Providence Terminal has not been properly engineered, managed, operated, fortified, or, if necessary, relocated, to protect against the factors discussed in Section IV.A, *supra*.

414. Shell has not integrated the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges and/or releases associated with these factors, into its systems for handling, storage, or disposal of hazardous waste at the Providence Terminal.

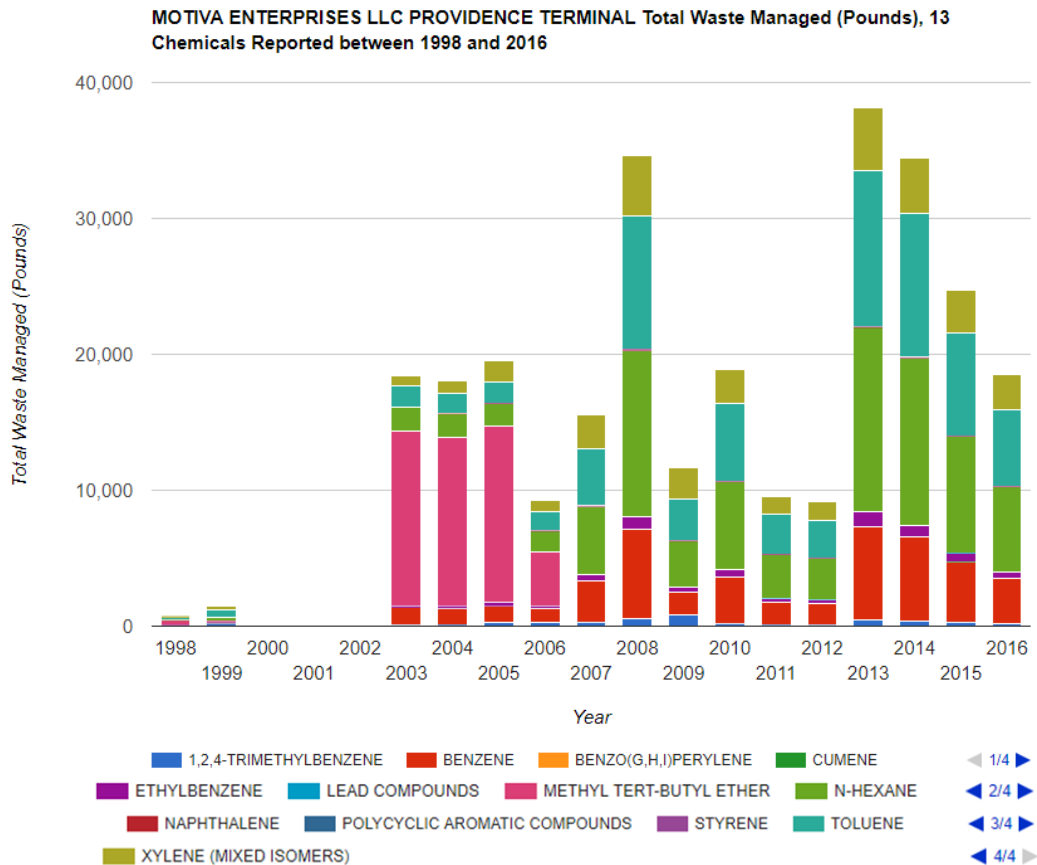
415. Shell has failed to address the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges and/or releases associated with these factors, in its RCRA and other compliance and permitting filings.

416. Shell has not modified the Providence Terminal to prevent pollutant discharges and/or releases associated with the factors discussed in Section IV.A, *supra*.

417. The design of the Providence Terminal, and any regulatory filing associated therewith, is premised on standards for spill containment, drainage, and resistance to weather events that do not integrate information related to the factors discussed in Section IV.A, *supra*, and the substantial risks of pollutant discharges and/or releases associated with these factors.

418. Shell's failure to adapt the Providence Terminal to the factors discussed in Section IV.A, *supra*, puts the facility, the public health, and the environment at substantial and imminent risk of pollutant discharges and/or releases from the Providence Terminal into the Providence Harbor, and the Providence River which flows through the communities of East Providence, Cranston, Warwick, and Barrington on its way to Narragansett Bay.

419. The resulting harm and ongoing risk of harm to the Providence Terminal, the public health and the environment has been and will continue to be significant, due to the magnitude of waste managed by the Providence Terminal:



EPA, *Motiva Enters. LLC Providence Terminal Total Waste Managed (Pounds), 13 Chemicals Reported between 1998 & 2016*,

[https://iaspub.epa.gov/triexplorer/facility_profile_charts?p_tri=02905MTVNT520AL&p_VAR=WST_PROD&p_LABEL=Total+Waste+Managed%20\(Pounds\)](https://iaspub.epa.gov/triexplorer/facility_profile_charts?p_tri=02905MTVNT520AL&p_VAR=WST_PROD&p_LABEL=Total+Waste+Managed%20(Pounds)) (last visited Oct. 25, 2017).

420. Shell’s operation of the Providence Terminal presents an “imminent and substantial endangerment to health or the environment” because the factors discussed in Section IV.A, *supra*, have resulted and will result in discharges and/or releases of solid and/or hazardous wastes into the environment and surrounding residential communities.

421. Shell has not disclosed its creation of this imminent and substantial risk at the Providence Terminal to the EPA, State regulators, or the public. Shell failed to disclose required information in its possession to the Federal and State regulators and the public regarding the effects of the

factors discussed in Section IV.A, *supra*, on the Providence Terminal. Shell's failure to disclose has contributed to the imminent and substantial endangerment to health and the environment.

422. Due to its failure to mitigate these risks, Shell has contributed and is contributing to the past or present handling, storage, treatment, transportation, or disposal of solid and hazardous wastes which may present an imminent and substantial endangerment to health or the environment under 42 U.S.C. § 6972(a)(1)(B), in violation of RCRA.

Twenty-Second Cause of Action

Violation of the Resource Conservation and Recovery Act – Failure to Comply with State and Federal RCRA Regulations Applicable to Generators of Hazardous Wastes

423. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

424. At the Providence Terminal, Shell is regulated under RCRA as a generator of hazardous waste, Handler ID No. RID059741520.

425. As described above, Shell's Providence Terminal generates, stores, handles, and disposes of refined petroleum products containing and/or comprised of hazardous waste constituents, toxic and hazardous chemicals, metals, and compounds, including, but not limited to: Ignitable Waste, Lead, Benzene, Ethanol, Ethylbenzene, Iron, Methyl Tertiary Butyl Ether (MTBE), NAPL, SGT-HEM (Oil and Grease), Petroleum Hydrocarbons, Pyrene, Total Suspended Solids, Xylenes (m,p,o), and Polycyclic Aromatic Hydrocarbons (PAHs): Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(ghi)perylene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, and Pyrene.

426. Petroleum products handled and stored at the Providence Terminal are comprised of hundreds of petroleum hydrocarbons and other constituents including but not limited to

hazardous waste constituents such as Benzene, Toluene, Naphthalene, Fluoranthene, Benzo(k)fluoranthene, Benzo(b)fluoranthene, Indeno(1,2,3-cd)pyrene, Benzo(a)pyrene, Benzo(a)anthracene, Dibenzo(a,h)anthracene, Chrysene, and 3-Methyl-cholanthrene.

427. The soils and groundwaters at the Providence Terminal are contaminated from Shell's past, present and ongoing handling, storage, treatment, transportation, or disposal of hazardous and solid waste and hazardous waste constituents.

428. Hazardous and solid waste and hazardous waste constituents at the Providence Terminal are generated, handled, stored, treated, transported, and/or disposed of at or near sea level in close proximity to major human population centers, the Providence Harbor, and the Providence River.

429. As described above, Shell has discharged and/or released pollutants and hazardous waste constituents from the Providence Terminal, and will likely continue to do so, due to, including but not limited to, infrastructure failures and inadequate infrastructure design.

430. It is highly likely that the Providence Terminal will have an unplanned spill, discharge, and/or release of pollutants, hazardous waste, and/or hazardous waste constituents, because the Providence Terminal has not been properly engineered, managed, operated, maintained, fortified, or if necessary relocated, in recognition of the factors discussed in Section IV.A, *supra*.

431. Shell has not integrated the factors discussed in Section IV.A, *supra*, and the risks of spills, discharges, and/or releases of pollutants, hazardous waste, or hazardous waste constituents into planning, operation or maintenance at the Providence Terminal.

432. As a consequence of these failures, Shell is not maintaining and operating the facility in a manner that "minimizes the possibility of . . . any unplanned spill or release of hazardous waste

or hazardous waste constituents to the air, soil, or surface waters of the State.” R.I. Code R. 25-15-102: 5.13(H)(1) & (J);, 5.15(G)(1).

433. Shell’s acts and omissions have also been in violation of 40 C.F.R. § 262.16(b)(8)(i), which requires small quantity generators who accumulate hazardous waste, as conditions for exemption from certain RCRA provisions, in part to comply with: “[p]reparedness and prevention – (i)Maintenance and operation of facility. A small quantity generator must maintain and operate its facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.”

434. To the extent that Shell is, or has been, a Large Quantity Generator Shell’s acts and omissions have also been in violation of 40 C.F.R. § 262.251, which requires that: “A large quantity generator must maintain and operate its facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.”

435. Shell’s ongoing failure to disclose information in its possession regarding the factors discussed in Section IV.A, *supra*, to Federal and State regulators and the public has resulted in an inability to maintain and operate the Providence Terminal to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

436. Shell’s ongoing failure to maintain and operate its facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous

waste constituents to air, soil, or surface water which could threaten human health or the environment causes Shell to be in “violation of [a] permit, standard, regulation, condition, requirement, prohibition, or order which has become effective pursuant to [RCRA].” 42 U.S.C. § 6972(a)(1)(A).

RELIEF REQUESTED

Wherefore, CLF respectfully requests that this Court grant the following relief:

- a. declaratory and injunctive relief to prevent further violations of the Clean Water Act pursuant to §§ 505(a) and (d) of the CWA, 33 U.S.C. §§ 1365(a) and (d);
- b. civil penalties of up to \$37,500 per day per day per violation for all CWA violations occurring between January 12, 2009 and November 2, 2015; up to \$51,570 per day per violation for all CWA violations occurring after November 2, 2015 and assessed on or after August 1, 2016 but before January 15, 2017; up to \$52,414 per day per violation for all CWA violations occurring after November 2, 2015 and assessed on or after January 15, 2017; and up to \$53,484 per day per violation for all CWA violations occurring after November 2, 2015 and assessed on or after January 15, 2018, pursuant to § 309(d) of the CWA, 33 U.S.C. § 1319(d), and the regulations governing the Adjustment of Civil Monetary Penalties for Inflation, 40 C.F.R. §§ 19.1–19.4;
- c. environmental restoration and compensatory mitigation to address the impacts of past violations of the Permit;
- d. injunctive relief pursuant to § 7002 of RCRA, 42 U.S.C. § 6972, ordering Shell to perform and pay for such work as may be required to respond to the hazardous waste and solid waste present at the Providence Terminal and restraining Shell

from further violating RCRA and the Hazardous Waste Regulations of Rhode Island;

- e. an award of the costs of litigation, including reasonable attorney and expert witness fees, under § 505(d) of the CWA, 33 U.S.C. § 1365(d), and § 7002 of RCRA, 42 U.S.C. § 6972; and
- f. all other relief as permitted by law.

JURY DEMAND

Plaintiff requests a jury trial on the issue of liability and any other issue cognizable by a jury.

Respectfully submitted,

Dated: October 8, 2019

CONSERVATION LAW FOUNDATION, INC.

By its attorneys:

/s/ James Crowley

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RI Bar # 9405

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